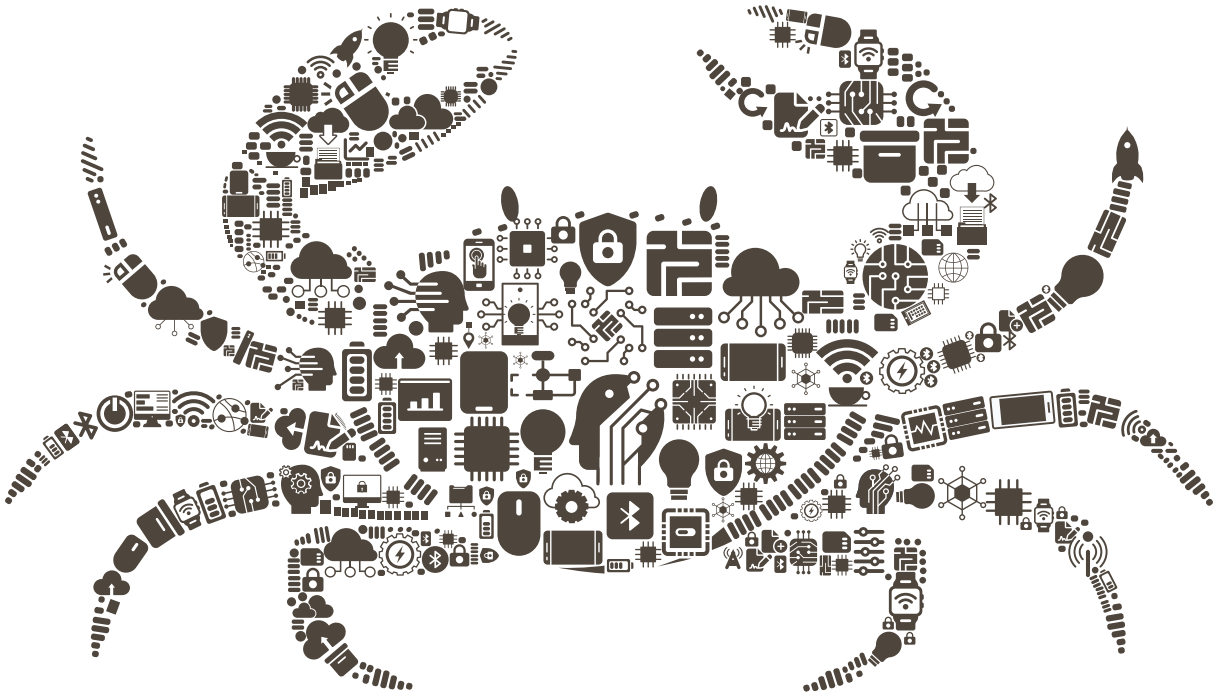
CIONET COOKBOOK No.3

RECIPES FOR DIGITAL SUCCESS



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FOREWORD

In his seminal book, *Future Shock*, American writer and futurist Alvin Toffler predicted "change in the rate of change." More than 50 years on, we are experiencing the exponential changes he forecasts, as confirmed by the rapid adoption of new technologies and the growth of hyper-scale organisations. We are witnessing a digital renaissance that could take another 50 years to settle down. Nothing as significant as this has occurred for at least 500 years since the invention of the printing press.

Today's economic situation is challenging, with skills shortages, pressure from the global economic slowdown and rising prices. In these circumstances, organisations can only remain competitive by reducing costs and delivering better customer solutions. This is fuelling increasing demand for new technologies to support innovation and efficiency.

At the epicentre of such developments is the CIO, who must make sense of the emerging landscape and is frequently asked to do more with less.

Digital leaders recognise the challenges implicit in their heritage organisations that are frequently held together by legacy systems and infrastructures. They seek sustainable remedies to cope with a fast-changing environment, opening a path for survival and growth. Like never before, their agendas are filled with urgent tasks that can often distract them from more important ones.

But time should always be set aside to consider the future and how products and services should evolve. In other words, it is time for genuine innovation.

At its heart, innovation is about helping people make the most of their current skills and knowledge, giving them the freedom to think about new ways of doing things and the confidence to try them. Technologies such as automation and open-source software liberate developers, giving them the power to innovate faster and the ability to focus on future solutions rather than present-day problems.

Innovation is about sharing ideas and developing them together. Amazing things happen when you collaborate. And technology underpins collaboration.

In this third edition of the Cookbook, we are delighted to collaborate with CIONET to present new recipes for digital success. This edition of the Cookbook provides unique and valuable insights into the challenges facing those responsible for navigating change and some potential solutions that digital and business leaders can adopt.

We are committed to helping digital leaders stay ahead of today's challenges while laying the foundations for a sustainable and profitable future.

We hope you enjoy this book.

Andrew Brown, Senior Vice President &
Chief Revenue Officer, Red Hat

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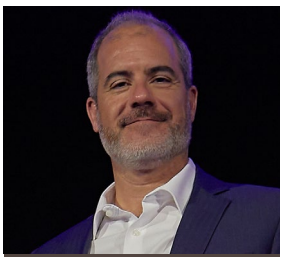

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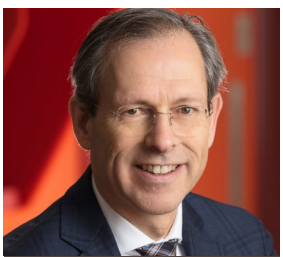

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INTRODUCTION

Developing A Taste for Synchronicity

Modern digital leaders face a trilemma

Our research suggests that pioneering European CIOs—Master Chefs—face a trilemma. Upon which of the following three crucial elements should they focus their attention? First, digital is fashioning customer styles and preferences at an accelerating pace. Second, businesses apply digital transformation strategies to stay aligned with their customers. Third, IT organisations are modernising their applications and platforms to support evolving business structures and customer needs. Further complexity comes from the fact that each of these elements—whether it's the focus on customer, business, or technology—is progressing at a different rate. We believe the only way for digital leaders to deal with this trilemma is to strive for synchronicity across all three elements of the IT landscape, or as Daniel Gebler, founder of online supermarket Picnic, states during our Cookbook, to deliver automation "from farm to fork."

Following the suggestion of Mark Foulsham, COO of Kensington Mortgages, we can use the analogy of mechanical gears. The trilemma of challenges around the customer, business and technology are three gears revolving at different speeds. Survival in the new digital era requires each gear to move at the same rate. Master Chefs must be able to oil the gears to achieve a frictionless movement of goods and services. In the third edition of the CIONET Cookbook, we describe how CIOs can influence and help synchronise the direction of all three gears to achieve a smooth-running Digital Kitchen. Axel Schell, CTO of Allianz Technologies, explains this requirement perfectly in the Cookbook when he says his corporate mission is to achieve "simplicity at scale."

Tracking developments on the frontline

The coronavirus pandemic has increased our reliance on digital channels to fulfil every aspect of our social lives and work activities. Electronic commerce, social media, and mobile applications influence and shape our consumption patterns like never before. Artificial intelligence (AI) has the potential to shift or even transform our perceived needs, or as Israeli professor and author Yuval Harari states, "to hack into our minds." Digital leaders today have an ethical responsibility to help steer the macrosocial, political, and economic environments.

Discussions with our Master Chefs reveal a new sense of purpose that encourages these leaders to introduce social and personal values into their daily routines. This sense of purpose also requires them to alert their organisations to changes within the external environment. From geopolitical complexities to macro-economic challenges, there are a broad range of external factors that can impact modern businesses. In this year's edition, our Master Chefs point to two external factors that are particularly important: the rise of emerging technologies and the demand for sustainable business practices. In our modern era of constant change, digital education and digital ethics are moving up the CIO's crowded agenda. The Master Chef is a storyteller around the digital campfire, informing customers and colleagues of the vast potential of technology to enhance our lives. Now more than ever, digital leaders must be visible on the frontline.

Innovating the business model

Organisations will only survive and prosper if they can synchronise with the changes taking place in the external market. This synchronicity requires agility, scalability, and continuous innovation. Digital technology lies at the heart of these three qualities, as has been demonstrated by digital natives such as Meta, Apple, Alphabet, Amazon, and Microsoft (MAAAM). Each of these firms has structured its business around digital platforms and microservices to enable it to ingest and analyse market data minute by minute. These agile firms are at the forefront of the digital revolution, and heritage organisations must follow their lead.

After speaking with Master Chefs in this edition of the Cookbook, we discern two ways heritage organisations can respond to volatile and ever-changing customer needs or use our gearing metaphor to stay in sync with the frontline. The first and most widely adopted approach is to apply digital techniques, such as open sourcing, to modernise the existing factory. Here, Master Chefs are helping their business partners

streamline and automate business processes in the front and back office to improve the quality, speed and cost of their products and services. These pioneering leaders are also introducing AI and machine learning to speed up product innovation, as Cindy Hoots at AstraZeneca demonstrated in the first edition of our Cookbook.

The second option is to adopt entirely new business models that redefine the organisation's purpose. Enel Group provides an excellent example of this approach. The company's corporate strategy is to evolve from a fossil fuel company to a renewable energy supplier. Enel uses digital architectures to transform from an asset-based utility to a software company. At the other extreme is Picnic, which provides an example of a start-up designed to compete with established retailers using drones and robot technology to transform the supply chain.

Transforming the technology platform

Master Chefs recognise that IT is often the slowest cog in the operational engine due to the persistence of legacy applications and infrastructures that can take many years to modernise or replace. When it comes to dealing with this slow-moving cog, evolutionary reform is no longer an option. The new digital era calls for ten-fold improvements in IT performance. These stretched targets can only be achieved by a root-to-branch review of operating methods and the implementation of fully re-engineered IT platforms and products.

Fortunately, our Master Chefs can now access digital ingredients such as public cloud and Agile development methods to help deliver these stretched targets. The first step is frequently a concerted move to IT integration, be this via a consolidation of fragmented infrastructures into a single platform or the rationalisation of discrete applications to achieve commonality of use. The other critical dimension of IT transformation is bringing together data assets to enable data-driven decision-making.

The second step in the reinvention of the Digital Kitchen is the modernisation of legacy applications and a smooth transition to public cloud platforms. All our Master Chefs are committed to a cloud-first strategy, but they also recognise that this goal can take many years to achieve. The majority of CIOs opt for a compromise via a hybrid scheme that preserves some legacy applications, but which transitions the majority of services onto public cloud platforms. For organisations like ING Bank Śląski and Meliá Hotels International, the imperative is to modernise the core reservation system in order to simplify customer interactions and accelerate product innovation.

In many cases, the efficiencies achieved through comprehensive IT integration can provide the necessary funding for application modernisation.

Defining the characteristics of successful digital leadership

As with previous editions, the third CIONET Cookbook continues to describe and categorise the recipes of successful European digital leaders. These pioneers are Master Chefs who run technology organisations like five-star restaurants, providing all the IT ingredients for digitally enabled business transformation. To ensure synchronicity between customer, business and technology, these pioneers also play an essential role in helping their boards to fashion and execute business strategies for the digital era. This key role calls for a new range of innate personal qualities.

As we search for the defining qualities of digital leadership, we find six characteristics that are becoming universal among the digital leaders we classify as Master Chefs:

1. Curiosity: Stimulating business innovation in a timely fashion
2. Imagination: Displaying open-mindedness to diverse perspectives from multiple sources

3. Purposefulness: Ensuring that corporate cultures align with the emerging digital age
4. Authenticity: Encouraging and inspiring others across their organisations
5. Dynamism: Fostering an ability to adjust rapidly to fast-changing conditions
6. Adaptability: Keeping a constant eye on new problems

The other big challenge for Master Chefs is bringing through the next generation of digital leaders. This process requires a significant investment in both time and money, but it is essential if organisations are to achieve synchronicity with market developments.

How to use this Cookbook

By drawing out strong use-case examples encapsulated in tasty recipes, we describe how your organisation can create and operate a five-star restaurant and ensure it has all the ingredients to attract the most discerning diners. The book is divided into four sections:

- Section One—Satisfying customer demands with tasty technologies by constantly adjusting digital strategies
- Section Two—Serving up new business recipes by innovating and automating activities
- Section Three—Reinventing the Digital Kitchen by integrating and modernising IT platforms and applications
- Section Four—Defining the six qualities of digital leadership by analysing the factors that have made our Master Chefs successful

Our recipes are embellished with 'playbooks' that deliver culinary specialities in important areas, including sustainability, business innovation, data-centricity, and digital leadership. These research-led playbooks are based on extensive interviews with industry experts and Master Chefs. They provide new insights into the preparation of five-star cuisine. Now, join us and our Master Chefs as we help you to develop a taste for the new digital era.

SECTION 1

SATISFYING CUSTOMER DEMANDS WITH TASTY TECHNOLOGIES

"E-commerce has transformed the dialogue between customer and supplier, but multi-modal interactions including voice, image, and movement, enabled by AI, will go much further."

We suggest in our Introduction to this year's CIONET Cookbook that the trilemma of challenges around the customer, business, and technology are three gears revolving at different speeds. In this first section, we focus on the first gear: the customer. Customer preferences and buying habits are changing at an accelerating pace. Successful organisations, both public and private, constantly adjust their customer strategies in response to fast-changing market trends.

Take, for example, businesses in the European hospitality sector. Traditionally a step behind its continental culinary counterparts, London now has over 18,000 restaurants. This diversity satiates the broad tastes of an increasingly multicultural and affluent population. Then, think about the example of fashion. Fast-fashion brands compress bi-annual seasons into months and weeks by quickly introducing affordable, on-trend clothing. Across all industries, the Master Chefs in this edition of the CIONET Cookbook agree that we are entering a new era of complexity in market behaviour.

When we delve deeper into these macro-level market trends, we see the growing influence of technology. Customers can now access vast amounts of information quickly, which allows them to research products, read reviews and compare prices. This knowledge empowers consumers to make more informed decisions. Online platforms and mobile apps have made it easier for consumers to shop online, pay bills, and access services on the go or from the comfort of their sofas. Data analytics, meanwhile, enables businesses to gather information on individual customers, which can be used for personalised marketing and product recommendations. Social media also plays a significant role in shaping customer behaviour.

This new era of complexity in market behaviour is being fed by new demands for innovation and fresh responses to regulation. During the past decade, technological advances, such as 3D printing and digital design tools, have made it easier for designers to experiment with new materials and styles, which speeds up product innovations and stimulates new consumption patterns. Concerns about environmental sustainability have also influenced buying preferences and encouraged ethical practices across entire supply chains. Processes within these supply chains must be transparent and are subject to tight regulatory controls.

The Master Chefs in the first section of our Cookbook are cognisant of these complex developments. They contribute digital tools and methods to help their organisations add new ingredients to their culinary menus. For example, Robbert Van Rutten, group CIO at Shell, works closely with his board to develop clean energy products and achieve a net zero footprint. Markus Voss, global CIO and COO at DHL Supply Chain is helping his clients tackle carbon emissions across complex supply chains. Jan Dobbenie, CIO and CDO at VDAB is employing new technologies, such as artificial intelligence (AI) and machine learning (ML), to reduce unemployment across the Flanders region of Belgium. Catriona Campbell, client technology and innovation officer at EY UK&I, is introducing large language models to help front-line workers respond more effectively to changing customer requirements.

CIONET's research suggests that technology will play a fundamental role in shaping customer behaviour during the rest of this decade. Our playbook on emerging technologies in this section identifies a new pipeline of applications and services that could complement or even supersede the IT developments of the past two decades. These emerging technologies include AI, ML, immersive technologies, the Internet of Things, 3D printing, and blockchain. Master Chefs should place themselves in the vanguard of frontline developments by joining their customers and business partners as they experiment with new techniques. The days of staying closeted in the back office must become a flavour of the past.

ONE
SUSTAINABILITY

In the second edition of our CIONET Cookbook, based on conversations with Master Chefs in 2022, few digital leaders mentioned sustainability as a significant issue. In just one year, the situation has changed dramatically.

Many of the executives we interviewed for this edition said sustainability is now a top priority. This sentiment aligns closely with broader environmental, social, and corporate governance (ESG) strategies. We believe this is just the beginning. Sustainability will dominate the digital kitchen as companies strive for net zero footprints through 2030 and beyond.

Our conversations indicate that Master Chefs can contribute to corporate sustainability agendas in three ways: providing technology services, transforming production and logistical processes, and designing sustainable products in partnership with strategic customers.

Let's look first at technology services. Some analysts suggest IT contributes 4% of global emissions, which is a figure that could escalate to double figures by 2030. To help reduce IT carbon emissions, Gunter Van Craen of German steel manufacturer Bekaert has migrated 85% of his firm's applications to the public cloud.

Other Master Chefs take a similar lead, collapsing data centre footprints and relying on renewable energy sources where available. Take Niklas Sundberg of Swedish security firm ASSA ABLOY, who has identified four key IT building blocks underlie his sustainability efforts: cloud-first, data-storage optimisation, hardware consolidation, and application simplification.

For some digital leaders, investing in production and logistics is the key to delivering sustainability. Estimates suggest logistics currently represents 20% of global carbon emissions. Markus Voss of DHL Supply Chain says his company is investing €7 billion to reduce emissions and aims to reach carbon neutrality by 2050. To deliver such savings, Markus Voss has a strategy incorporating predictive data analytics, the Internet of Things, and digital twinning. His team is introducing digital transport vehicle sensors to help optimise supply chain routing.

Niklas Sundberg, meanwhile, says the implementation of smart security can contribute to energy-efficient buildings in the future and will help enforce ESG standards. At Bekaert, Gunter Van Craen also exploits data from IoT devices to improve product sustainability.

The final route to sustainability is via the design of sustainable products in partnership with strategic customers. Rob Van Rutten of Shell has introduced Agile methods to accelerate sustainable innovations across the company's core production processes. He has also introduced digital tools to measure carbon emissions across the end-to-end supply chain. Van Rutten believes innovation on behalf of customers is crucial to delivering sustainable solutions. Shell has introduced electric vehicle charging stations across its 46,000 retail outlets worldwide.

In the case of Bekaert, Gunter Van Craen is collaborating with his customers to help his company reduce carbon emissions by 46% through 2030 via the adoption of green inputs and renewable energy across 43 countries.

The common theme across all these recipes is a focus on collaboration. The IT organisation has the tools and expertise to help its internal and external business partners monitor and optimise carbon emissions. Eliminating waste across complex supply chains requires sharing consistent data points between all parties. The good news is that the effective use of smart devices and digital twinning can help enterprises to both reduce waste and focus on speed and efficiency.

Bekaert

Delivering sustainability at scale

Ingredients

- Building sustainability goals and timescales into the group's business strategy
- Adopting a new digitally enabled business model to achieve these sustainability goals
- Introducing a new IT operating model and a set of partnerships to enable transformation

Preparing the dish

Gunter Van Craen is chief digital and information officer at Bekaert. He received a master's degree in accounting and auditing from the University of Antwerp. After a period in banking with KBC in Belgium, he joined Johnson & Johnson in the finance function. During 17 years with the pharmaceuticals firm, Gunter held a range of senior positions. He joined Bekaert in 2020.

Bekaert is a multinational company that specialises in the material science of steel wire transformation and coating technologies. Headquartered in Belgium, the firm employs 28,000 people globally and operates in 43 countries and 130 separate manufacturing locations, many of which are co-located with its customers. Bekaert acquired Pirelli 's steel cord business in 2014. This was the largest acquisition in Bekaert's history, adding approximately €300 million to consolidated annual sales.

Launching a radical business strategy

With a 140-year heritage, Bekaert announced a radical new strategy in 2020. With a focus on sustainable products and operations, the company wants to reduce its carbon footprint by 40% by 2030. Bekaert's

executives recognised the company has to set sustainability standards in its sector by working with its customer base, which includes tyre manufacturers and large construction firms.

The company has traditionally been dependent on water, energy, and legacy machinery, which can be up to 70 years old. Bekaert wanted to move to a new business model that uses digital solutions and which is based on green inputs, such as scrap steel and renewable energy. However, the company's executives knew the firm would have to continue operating its legacy manufacturing base while making this transition. They also recognised the important role technology, such as software and the Internet of Things, would play in improving the safety and sustainability of its products.

The new business strategy had three main components:

- Product innovation using new technologies to improve quality, safety, and longevity
- The modernisation of production machinery and processes to meet sustainability targets
- The introduction of modern reporting tools to meet regulatory requirements and boost supply chain efficiencies

As a member of the executive committee, Gunter ensured digital solutions allowed the business to meet its strategic aims.

Achieving aggressive sustainability targets

Gunter proposed four digital transformation initiatives. The first was to harvest all available data to provide accurate reporting on sustainability and safety goals. The second was to collaborate more closely with customers and partners that were pressing for improved standards. The third was to introduce machine learning and to optimise production machinery through the application of data analytics and intelligent processes. The fourth was to deploy Agile development models across the organisation to meet heavy demands for change and innovation.

Gunter believed this combination of digital initiatives would help transform the business, as long as his IT organisation kept up with demand. The application of Agile methods led to some quick wins that generated new pressure from the company's four main business units. Gunter's task was to prioritise his team's efforts.

Expanding the digital kitchen

Bekaert's IT expenditure when Gunter joined the company in 2020

Gunter Van Craen describes how digital transformation is helping a traditional manufacturer that operates in more than 130 countries to satisfy new and aggressive sustainability targets.

Gunter Van Craen, CDIO, Bekaert

Scan code to watch the full interview.

was around 0.8% of total revenues (about $6 billion). Other firms across the sector tended to spend closer to 2%, so he worked hard to maximise the effectiveness of existing resources and encourage new digital investment.

He migrated applications to the cloud to reduce capital expenditure on data centres and deployed software-defined networks. To date, 85% of applications have been migrated to the cloud. Gunter is working closely with hyper-scale providers to optimise workloads. He recognised quickly that a move to the cloud required a change in the IT operating model to contain costs and increase efficiencies. He also recognised that IT spend might rise as his organisation moved to a data-centric business model.

To achieve economies of scale across software development and maintenance, Gunter established a core group of data analytics specialists at Bekaert's head office in Belgium, who manage business and regulatory reporting. In parallel, he introduced a citizen development approach across the firm's manufacturing locations, so engineers can implement their own solutions to business challenges.

As a final step, he expanded his rota of strategic suppliers. To SAP, he added software-as-a-service providers, such as Adobe, data analytic experts, including SAS and Software AG, and manufacturing application specialists. Now, the key challenges is to ensure there is full integration between all parties to enable end-to-end process improvements.

Defining the role of a Master Chef

As a member of the executive committee, Gunter fulfils two important roles. As CIO, he runs an efficient and sustainable IT organisation that works with its green partners, such as hyper-scalers, and which optimises software development to reduce carbon footprint. As CDO, he draws the board's attention to new business models and innovative techniques that satisfy sustainability targets.

Gunter is disappointed that as many as half of digital leaders do not see sustainability as a key priority. He believes leaders must take difficult decisions and should always be authentic. Effective leadership is about painting the picture and letting teams get on with execution. As a digital leader, he only steps in when roadblocks appear.

One of his key achievements is implementing high-performing teams across the group that combine IT talent with engineering smarts. Gunter says clear roles and empowered teams are critical to changing traditional business

structures. He lets his staff take risks but always covers their backs.

Gunter's leadership mantra is based on Winston Churchill's famous quote: "Success is not final; failure is not fatal: it is the courage to continue that counts." His advice to aspiring digital leaders is threefold: be open-minded, adopt continuous learning throughout your career, and be decisive and confident.

ASSA ABLOY

Empowering the business to make sustainable decisions

Ingredients

- Writing the *Sustainable IT Playbook for Technology Leaders*
- Identifying the key building blocks for sustainable IT practices
- Empowering the business to make decisions that protect the environment
- Leading his team as they support digital transformation at ASSA ABLOY

Preparing the dish

Niklas has a master's degree in information technology from Regis University in Colorado and an additional degree from the Royal Institute of Technology in Stockholm. A former professional ice hockey player in the US, he worked for Sony Ericsson, Connecta, and Gartner. Niklas joined ASSA ABLOY Global Solutions in 2017, becoming CIO in 2020. He is the author of the *Sustainable IT Playbook for Technology Leaders*.

ASSA ABLOY is a Swedish security firm focused on products and services related to locks, doors, gates, and entrance automation. The company, whose brands include Yale, has operations in over 70 countries and 52,000 employees.

Defining sustainability for CIOs

Niklas says far too many business and digital leaders still don't fully understand the impact of IT on the environment. Today, IT is responsible for about 4% of worldwide energy consumption. Data centres account for up to 2% of carbon emissions globally.

He says CIOs must recognise their role in helping their businesses to enable sustainability through IT. The Corporate Sustainability Reporting Directive comes into force in 2024, when 50,000 European companies will have to disclose their Scope 1, 2, and 3 emissions. Similar legislation is being introduced in North America.

Niklas encourages CIOs to recognise that no one has all the answers on sustainability. Be honest, set your ambitions, look to collaborate, and set a pathway to net zero. He identifies four building blocks for sustainable IT practices: cloud and data centres; data storage and applications; hardware and equipment; and manufacturing and energy.

Cloud and data centres

As businesses become reliant on the cloud, CIOs should aim for a data centre power usage effectiveness score of around 1.2. They should look for net-positive data centres that are close to energy providers. As CIO of ASSA ABLOY, Niklas has assessed and optimised the location of servers as part of a move to net zero.

He says CIOs should focus on carbon intensity, which measures how much CO2 is emitted per kilowatt hour (kWh). While Nordic businesses tend to emit 20 grams per kWh, German businesses often rely on gas and coal and can reach 400 grams per kWh. CIOs should ask tough questions and look for providers that offer hosting in low-carbon regions. He suggests Google and Microsoft are current frontrunners, with Amazon making big strides forwards.

Data storage and applications

Cloud makes it much easier to switch on new machines and use more computing power. Niklas says as much as 70% of stored data is never used again. He believes current data use is unsustainable. Governments and businesses should create policies and standards around data use and storage: "The problem won't solve itself."

The average blue-chip company runs about 2,000 applications. Sustainability offers a great platform for rationalisation. Assess your applications in terms of 'tolerate, eliminate, invest, and migrate.' This four-step process will allow you to use carbon intensity as a driver for application rationalisation.

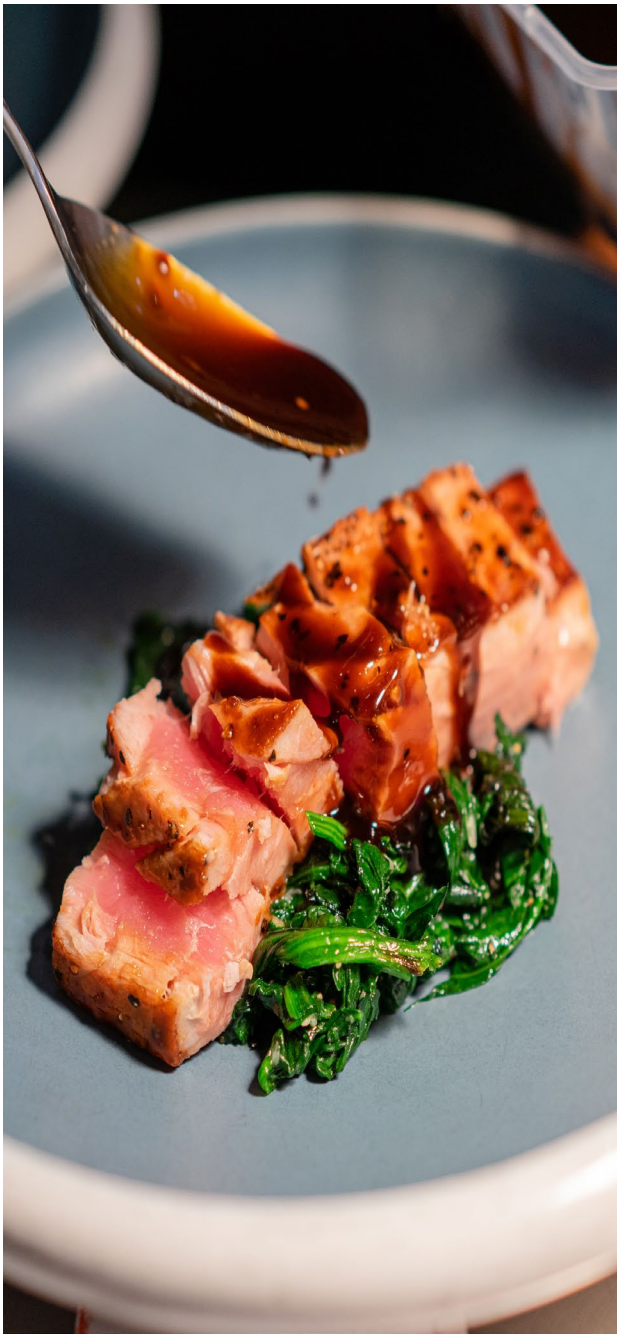
CIOs should also show developers the environmental impact of turning off cloud services. He encourages his peers to adhere to three principles for application development: re-locating (use low-carbon regions); re-sizing (only consume what you need);

Niklas Sundberg is a passionate advocate for sustainable IT practices and the technologies that can help drive environmentally sensitive decisions in all areas of business.

Niklas Sundberg, previously: Senior Vice President & Chief Information Officer at ASSA ABLOY

currently: Chief Digital Officer (CDO) & SVP at Kuehne+Nagel

Scan code to watch the full interview.



and re-architecting (build on new technologies, such as serverless and as-a-service).

Hardware and equipment

Niklas says CIOs must find ways to consume IT resources in a more sustainable and circular manner. There were 57 million tonnes of e-waste globally in 2021 and this total could hit 75 million by 2030. A laptop consumes 320 kilos of CO2 over a four-year lifespan and 80% of those emissions are produced in the manufacturing process.

CIOs should aim to extend the life of hardware by changing batteries and upgrading memory. At ABBS ABLOY, Niklas has explored how to reduce the number of devices, such as by not buying a fresh laptop for each new starter and using refurbished phones. His firm is also working with partners to repurpose and recycle assets.

Companies who get their IT hardware strategy right can turn asset disposal into a profit-generating activity. CIOs should assess whether providers exploit non-virgin materials and analyse their commitment to Life Cycle Assessment measurements.

Manufacturing and energy

Niklas says digital leaders should use IT to manage waste, reduce hazardous substances, and make processes leaner. Technology can also optimise route planning for deliveries and companies should explore regionalised manufacturing for sustainable logistics processes.

All CIOs face a complex value chain. Remember that as well as being a source of emissions, technology can also enable change. His company has reduced business travel by 50% since the coronavirus pandemic. Building management is also crucial. CIOs should help their organisations to monitor and regulate heating and lighting.

Defining the qualities of a Master Chef

As CIO at ASSA ABLOY, Niklas is helping his business to shift from physical to digital identity as the backbone for security. His team is building the operational systems to support this transformation. They're also developing effective customer experiences for people who use digital identities. Sustainability by design is crucial in all elements of his team's work.

Niklas is a passionate leader who puts the team before the individual. He's demanding and ambitious. He's also fortunate to lead a team that's keen to learn and support the business on its digital transformation journey. Rather than focusing on the finer details, his job is to lift barriers and empower his team, so they can reach the right business outcomes.

He advises next-generation leaders to avoid doing too much too soon. Know what you're aiming for but don't overextend yourself. Set your heart on a destination and concentrate on the elements that will allow you to master your craft.

DHL Supply Chain

Developing innovative solutions to sustainability challenges

Ingredients

- Meeting net zero targets through the effective use of digital technology
- Creating data-led products that meet the supply chain requirements of customers
- Using innovations, such as IoT and digital twins, to boost operational effectiveness
- Delivering data-led transformation that produces business value sustainably

Preparing the dish

Markus Voss is global CIO and COO of logistics giant DHL Supply Chain. A scientist by trade, with a PHD in physical chemistry from the University of Cologne, Markus began his career with Accenture. He joined DHL almost 20 years ago. Having held a range of positions across IT and strategy, he assumed his current role in 2017.

DHL employs about 600,000 people globally. Each business within the group, such as Deutsche Post and DHL Express, uses DHL Global Business Services' 5,000-strong IT organisation. At DHL Supply Chain, Marcus manages 1,800 IT specialists who work with 140,000 colleagues to run their clients' supply chains. The business operates more than 2,000 warehouses globally, where goods are stored, picked, packed, received and shipped.

Delivering sustainability

DHL Supply Chain is driven by sustainability. Logistics is responsible for 20% of global carbon emissions and the business wants to deliver net zero logistics through the

effective use of digital technology. DHL Group is investing €7 billion through 2030 to drive down its carbon footprint and DHL Supply Chain has committed to being carbon neutral by 2050.

Progress has been significant—40% of the organisation's warehouses are already carbon neutral. Another priority area is road transport: DHL Supply Chain has committed to electrifying 60% of the last mile of deliveries by 2030. To meet these targets, the organisation is exploring sustainable fuels, such as biogas, and also electric vehicles and hydrogen.

The company's first fully electric-powered flight took place recently in Seattle. Markus says the organisation is "technologically open" to any solutions to sustainability challenges. While hydrogen-powered vehicles are a potential game-changer in the longer term, bridge technologies—such as electric vehicles—will play a crucial role in the short term.

Using digital and data to drive change

Data is critical to helping DHL Supply Chain meet its sustainability goals. Standardisation is at the forefront of this work. Markus' team uses data to ensure trucks that deliver goods don't return to base empty and are instead used to make another delivery on the way back. His team has also worked with an automotive customer to show how emissions can be reduced by 40% by optimising routes and shifting transport modes, such as from air to road or rail.

A core team of data engineers and scientists builds the environment to power this analytical effort. The organisation uses this architecture to ensure information is used in a decentralised but secure manner. This harmonised approach means it's easier to develop standardised data-led products that meet the supply chain requirements of customers.

Leading joined-up services

Markus has an all-encompassing leadership role that spans operations, digital and service design. It's still rare for European CIOs to reach the heights of COO. Markus was asked to lead operations because technology was seen as fundamental to the company's day-to-day work. Bringing IT and operations together makes it easier to deliver standardisation: "I have a passion for technology that drives value for the organisation."

In his joint role, Markus has been able to prove the benefits of innovative technology to operations and ensure service design is considered from the outset of

Logistics is responsible for 20% of global carbon emissions, so Markus Voss is leading a joined-up approach to operations and technology that's changing the industry for the better.

Markus Voss, Global CIO, COO, DHL Supply Chain

Scan code to watch the full interview.

every business project. The pace of digitisation across logistics continues to increase. DHL Supply Chain will invest €2 billion in digital solutions through 2025. Despite the increased use of automation, Markus believes the "winning formula" will involve a balance between people, who do the thinking, and bots, who complete repetitive tasks: "We believe strongly in collaborative robots."

Connecting systems and data sources

DHL Supply Chain pursues a cloud-first strategy. While back-end processes, such as finance and human resources, are fully in the cloud, Markus says many third-party partners that support supply chain systems are not ready for the cloud. These systems, covering warehouse and transport management, require low latencies and huge availability and resiliency.

To boost operational effectiveness, the company has built its own Internet of Things (IoT) platform. The firm tags thousands of assets and supports billions of connected devices. As an example, DHL Supply Chain used sensors to track temperature control for two and a half billion vaccines during the coronavirus pandemic. Markus says IoT will be a big diver for future success. The company is building a digital twin to scope-out supply chain enhancements: "Being able

to play through the impact of 'what-if' scenarios is very exciting."

The company, in short, is increasingly reliant on the data it collects. However, it can't allow this reliance on data to compromise its stated aim of acting in a sustainable manner. Markus, therefore, ensures IT sustainability is prioritised. Code for internal applications is optimised and end-of-life legacy systems are rearchitected on modern platforms. He also looks for cloud suppliers that power data centres in an energy-efficient manner. The company has started a certification process to ensure partners in all business areas work in a sustainable manner.

Defining the qualities of a Master Chef

Markus hates standing still. He relishes any opportunity to synthesise the things he's learnt into a vision. He spends a lot of his time defining the future strategy and making the organisation excited about the journey to digital transformation.

A collaborative management style is crucial to success. Markus says that being stubborn in an international business is a recipe for disaster. He works with local leaders to deliver constant improvements using her personal mantra: "Every day, a little better."

Markus advises next-generation digital leaders to stay curious. Don't just focus on your own career; develop the people you work with because you will be judged on the opportunities you create for others. His organisation has created a 'a passport for success,' which highlights when each individual learns new things and achieves targets.

Shell

Accelerating the journey to net zero

Ingredients

- A clear business imperative focused on clean energy and net zero
- A data-driven IT philosophy that helps drive the customer experience
- A relationship with the business that encourages product innovation
- An internal IT organisation that owns and manages its critical control points

Preparing the dish

Robbert Van Rutten is a graduate in business economics and has an MBA in business studies. He has spent 32 years at Shell and has worked across a range of functions, including accounting, marketing and most recently IT. In 2020, he was appointed CIO of downstream operations. In July 2023, he was elevated to the position of global CIO, which encompasses exploration, production, trading and all customer activities.

Shell is a British multinational energy company headquartered in London. It is the second largest investor-owned energy company in the world. Shell was formed in 1907 through the merger of Royal Dutch Petroleum and Shell Transport and Trading. By 1920, Shell was the world's largest producer of oil. Today, the company is active in every area of the oil and gas industry. It has operations in over 70 countries, a staff of 93,000 people, and 46,000 retail outlets.

Recognising the business challenges

Shell turns energy assets, such as oil, gas, and renewable energy, into downstream products for business and consumer customers. Robbert says there are three strategic challenges facing the business: access to energy assets, affordability of energy products, and the need to reduce carbon emissions. He believes technology can assist Shell in dealing with these three challenges, which he refers to as a "Trilemma."

Robbert also emphasises Shell's passion for its business (B2B) and retail (B2C) customers. Each customer in every sector has different requirements. However, he believes digital technologies can support innovation and enable Shell to retain market leadership. Robbert says customers should have the same experience regardless of channel, which he refers to as "a B2C experience in a B2B world." To deliver on this promise, he has helped Shell to introduce its MarketHub customer portal.

Focusing on sustainability and net zero outcomes

Shell supports the ambitious goal of the Paris Agreement, which is to limit the rise in global average temperature this century to 1.5 degrees Celsius above pre-industrial levels. Today, the business is pursuing a strategic transformation via the adoption of sustainable business practices and the development of low carbon products. For example, Shell has introduced electric charging points at many of its 46,000 retail outlets. Across the business sectors it serves, Shell is tuning its products to meet the sustainability needs of its key customers, such as major airlines.

Robbert says technology has a crucial role to play in carbon emissions. IT can also be harnessed to have a positive impact on sustainability. Shell is already using technology to help reduce greenhouse emissions. For example, AI is being used to optimise plant and supply chain operations, while blockchain techniques can be used to achieve a transparent tracking of the environmental attributes of energy products.

Aligning IT with business priorities

Robbert recognises the historic priority of Shell's IT department was to provide a secure and reliable service to the business. However, IT today is focused on supporting innovation across the business' commercial products. Robbert has introduced Agile methods that enable his IT staff to work with the business to continuously improve their innovative offerings.

Robbert Van Rutten is harnessing the power of digital to fast-track Shell's journey towards clean energy products and its goal of achieving net zero carbon emissions.

Robbert Van Rutten, Global CIO, Shell

Scan code to watch the full interview.

This Agile process includes the generation of minimum viable products that can be scaled to meet the demands of global markets. At the heart of this approach is the recognition that IT can help "reimagine" how the company operates, whether that's in terms of business process redesign, data management or the use of cloud-first platforms. In all these areas, IT needs to adopt flexibility to support business agility.

Organising the digital kitchen

Robbert has sought to bring IT capability in-house during the past few years in several key areas, such as cybersecurity, software development and enterprise architecture. This insourcing helps IT respond quickly to fresh business demands. The IT organisation is split into four components: CIOs within each business set strategy; operations teams "follow the sun"; IT engineers provide resources that meet local business requirements; and corporate teams look after key line-of-business functions.

Robbert is clear that digital means data, especially in the customer context. He is keen to drive value from IT by understanding where data sits and how it can be mobilised. Shell has mature ERP systems that support its global business operations. However, Robbert believes process standardisation through the use of AI and API interfaces can lead to higher levels of value from technology across the globe. He also believes it's important to "fall in love with the experience, not the technology." One of Robbert's big bets is on low-code/no-code, which he hopes will transform Shell's internal culture. Robbert strongly believes that the digital realm is intrinsically tied to data, cross application integration strategy and partnering across ecosystems. To accelerate digital innovation, open-source standards and interfaces are becoming increasingly important.

Defining the qualities of a Master Chef

Robbert says the CIO role is evolving rapidly from a concentration on cost-based management to a focus on delivering business value. He views the modern CIO as a digital leader and an advocate for business change. The successful CIO is both an integrator and an orchestrator, working alongside their line-of-business peers.

One of Robbert's priorities is to acquire, develop, and retain top talent. He has introduced a quarterly reward scheme that recognises and promotes excellence. He believes top talent responds to a clear strategic vision that conveys purpose, such as the journey to net zero. He describes the current era of IT as "a moment of light" where current and next-generation digital leaders can use their capabilities to make a genuine difference to society.

Poke Bowl with Wild Salmon and Brown Rice Salad

Ingredients:

- 500g previously frozen wild salmon, skinned
- 1 medium ripe avocado
- 1 thinly sliced medium yellow onion
- 1 bunch of scallion greens
- 1 bunch of fresh cilantro
- 8g tobiko (flying fish roe) or other caviar
- 3 tablespoons reduced-sodium tamari
- 2 teaspoons toasted (dark) sesame oil
- ½ teaspoon Sriracha
- 400g cooked short-grain brown rice, warmed
- 80g of spicy greens, such as arugula, watercress, or mizuna
- 2 tablespoons rice vinegar
- 2 tablespoons extra-virgin olive oil
- 1 tablespoon Chinese-style or Dijon mustard
- Lemon juice

Arlene Buehler's favourite dish.

Serves 4

Directions:

1. Begin by preparing the poke bowl ingredients. Remove the skin from the salmon and cut the fish into 2 cm cubes.
2. Dice the avocado and sprinkle it with lemon juice to keep the colour. Thinly slice the onion and scallion greens. Chop cilantro.
3. In a medium bowl, gently combine the cubed salmon, diced avocado, sliced yellow onion, sliced scallion greens, chopped cilantro, and the chosen caviar (tobiko or other).
4. For the dressing, mix 3 tablespoons of reduced-sodium tamari, 2 teaspoons of toasted sesame oil, and ½ teaspoon of Sriracha. Drizzle this dressing over the poke mixture and give it a gentle toss to coat the ingredients evenly.
5. In a large bowl, combine the warmed brown rice with the spicy greens of your choice (arugula, watercress, or mizuna).
6. In a small bowl, whisk together 2 tablespoons of rice vinegar, 2 tablespoons of extra-virgin olive oil, and 1 tablespoon of either Chinese-style or Dijon mustard. Pour this flavorful dressing over the rice and greens mixture, ensuring it's well-mixed.
7. To serve, create a delightful presentation by placing the poke mixture over the brown rice salad. The savoury salmon and avocado poke pairs perfectly with the hearty and tangy brown rice salad.

For an added textural dimension, include some toasted sesame seeds or crushed nuts, like cashews or almonds, to sprinkle on top of the poke bowl. This will provide a pleasant crunch and nutty flavour.

PLAYBOOK 1

SOLVING OUR SUSTAINABILITY ISSUES

Sustainability is essential for the future of the planet and humankind. But in recent years, politicians and industry leaders have indulged in lots of talk and little action. We are already in danger of missing the Paris Climate Agreement targets that limit temperature rises to under two degrees centigrade by 2050.

CIONET UK held a public event on sustainability last year and we were disappointed by the low attendance. We also conducted a survey with recruiter Harvey Nash that revealed sustainability was not in the top 10 strategic issues for European CIOs.

However, the healthy debate on sustainability at CIONET events during 2023 suggests there has been a big shift in direction. Suddenly, the gravitas of the impending environmental crisis is becoming clear and digital leaders recognise the need for urgent action.

Understanding the scale of the challenge

Digital technologies are an important enabler in helping Master Chefs to achieve their strategic sustainability goals. Many of the technologies required to deliver net zero targets might not have been invented yet, so CIOs must look out for new innovations (what CIONET calls "weak signals") and they should be prepared to undertake proof-of-concept trials.

Technology cannot eliminate carbon emissions in isolation. However, technology can play an enabling role in helping businesses and their customers to redesign their operational processes to become net zero. Our research suggests IT has much to offer its business partners when it comes to reducing carbon emissions.

Data from the Internet of Things and predictive analytics can be used to reduce asset maintenance times and produce operational efficiencies. The deployment of artificial intelligence (AI) and low-code tools to frontline workers will also be key. These kinds of data-led innovations lean heavily on the effective management of information and the implementation of standards, including the use of open sourcing.

However, while innovative solutions to sustainability challenges could emerge, CIOs cannot afford to sit back and wait for change. Estimates suggest IT contributes at least 3% of global carbon emissions currently. This proportion will increase as AI becomes more prevalent. IBM research suggests 80% of all data globally has been generated during the past two years. What's more, we

will likely use more data to provide businesses with valuable insights going forwards. This increasing use of data will require more processing and storage capacity.

Our CIO community recognises that IT must get its own house in order by making the right choices in a sustainable world. IT departments should work closely with vendors, such as cloud hyper-scalers, to help reduce the environmental impact of technology. IT vendors have ambitious targets and can be effective partners in co-developing sustainable solutions. However, each partner must understand its objectives before making strategic choices.

Evidence suggests hyper-scalers are taking a proactive role in tackling sustainability, but they must provide metrics to demonstrate their competence. Governments and auditors need tangible proof that vendors and IT organisations meet requisite standards. The introduction of regulations across Europe will hasten the need to manage carbon emissions. All technology parties, whether internal or external, share this carbon-reporting responsibility. While governments are active in enforcing such standards, private industry can move faster.

Another consideration: a large proportion of hardware can be upgraded and recycled. IT vendors, such as IBM and Oracle, are recycling 90%-plus of their products by re-conditioning hardware and software. Consumers also need to be more conscious about the processing power required for their devices and applications, and the waste of materials when these devices are disposed of unsustainably. We must all work towards net zero targets.

Putting sustainability at the heart of the business

To ensure technology plays a role in sustainability strategies, CIOs must talk constantly with their C-suite peers and other business partners. The good news from our research is that Master Chefs are at the forefront of strategy formulation and execution, not the back end.

However, all CIOs should continue to educate their peers about the potential of technology to solve key business challenges, including sustainability.

Conversations with our Master Chef suggests these conversations are increasing in regularity and velocity, with digital leaders placing sustainability at the top of their IT agendas for 2023 and 2024. Our research suggests there are several techniques that CIOs can use to ensure technology-enabled sustainability is a business imperative:

1. Make sure you're in the room when strategies are developed—This position will enable you to gain top-down commitment to plans that include technology deployments. To take on this core role successfully, CIOs must educate their business partners about how technology can solve challenges. A crucial component here is the data needed to address business problems—where it sits, how much work will be required to clean it up, and who should own it.
2. Consider the entire ecosystem within which your business operates—It's important that one party in the ecosystem takes responsibility for data integration and related processes. The ownership of intellectual property (IP) is often a secondary consideration in ecosystems, as the resulting IP often belongs to the entire industry.
3. Adopt open standards to enable common data formats and models—Openness helps to solve the problem of ecosystem integration and simplifies supply chain connectivity. Open standards and platforms can also help to eliminate waste in programming and operations. Remember that our companies do not compete on the applications we use, but on the data sets we employ.

As CIOs look to drive the sustainability conversations in their businesses during the next decade, our research suggests there are five key ways we can work to reduce

waste (with the potential to save between 30% and 50% in costs and carbon footprint):

- Migrate infrastructure and applications to public cloud platforms as these provide the best environmental, social, and corporate governance option
- Exploit differences between geographic regions to achieve optimal energy and water sources
- Follow the sun to ensure spare processing capacity is used
- Use robotic process automation to remove unwanted data, especially information that has exceeded the regulatory lifecycle
- Adopt the most efficient storage processes and procedures, including limitations on multiple email copies

Conclusion: No time to waste

Let's be clear: time is running out on net zero initiatives. IT must play a central role in setting the pace for change and providing tangible solutions to sustainability challenges. CIONET research suggests sustainability has moved to the top of the CIO's agenda. Now is the time to demonstrate business leadership in reducing carbon emissions through active dialogue and collaboration upwards and outwards.

TWO
EMERGING TECHNOLOGIES

Across the last two decades, four technology-led developments have dominated the global economy: social media, mobile applications, data analytics, and cloud computing. Today, Master Chefs incorporate these essential ingredients into all their tasty recipes.

But businesses and digital kitchens will face new challenges as more powerful technologies emerge in the coming years, including artificial intelligence (AI), machine learning (ML), Web 3.0, augmented and virtual reality, and ultimately quantum computing. The C-suite is, for the most part, confused about how these emerging technologies could be used to challenge or transform current business models. Digital natives, such as Meta and Google, are investing billions in AI and large language models (LLMs). So, how should CEOs and other senior executives respond to these game-changing initiatives?

The three recipes in this section illustrate how long-established organisations are putting emerging technologies to work. Intel is developing an integrated technology fabric to convert data into commercial value, while VDAB is applying AI to help reduce unemployment and upskill workers. Finally, EY is embedding intelligent tools into the workplace to enhance professional productivity. Here is a summary of the recipes contained in this section.

Lisa Spelman, corporate vice president and general manager of the Xeon and Memory Group at Intel, recognises the exponential increase in transistor density predicted by Intel's founder, Gordon Moore, places heavy pressure on the firm to assist its customers in trialling and scaling out business innovations. In her view, technology is the business, and AI will become an inflexion point for companies in the years ahead. Her recipe describes how an open microprocessor architecture extending from edge devices, such as laptops and sensors, to mainframes and public clouds can offer an agile framework for new technologies to deliver business value. Intel is embedding security features into this framework to ensure business continuity.

Catriona Campbell, client technology and innovation officer at EY UK & Ireland, recognises that modern businesses face a combination of external challenges. She sees emerging technologies, such as AI and ML, as powerful tools that can help senior executives

and frontline workers to respond effectively. EY has established a $1.8 billion central fund to encourage innovation initiatives. She believes AI can help to eliminate low-value work within her firm and her clients. She also believes LLMs can work as co-partners with professionals in the workplace. EY has established a universal platform, or "walled garden", to ensure emerging techniques such as AIs and LLMs are used responsibly.

Jan Dobbenie is CIO at VDAB, which helps citizens find and retain employment in Flanders. Jan recognises that VDAB's main challenge is to help its citizens navigate ever-changing market conditions. His transformation programme called VIBE has become a central element of VDAB's business strategy. His approach has been to exploit emerging technologies, such as AI and ML, to reduce regional unemployment and match the personal circumstances of every citizen with local employment opportunities. Citizens are asked to fill out and download their CVs to build a comprehensive database of skills and related educational needs.

Perhaps the most important lesson from this section is that there is no certainty as to where the new influx of technologies might take us. We can be sure that the next 20 years will be as dynamic as the previous two decades, and that new start-ups will continue to confront established players. Executives would be well advised to experiment with emerging techniques, so that they can scale-up their successes when the time is right.

Intel

How to lead a business in a fast-moving marketplace

Ingredients

- Adopting open-source partnerships to maintain Intel's leadership
- Listening closely to customers to deliver successful innovations
- Being honest and authentic to engender trust with your team

Preparing the dish

Lisa Spelman is corporate vice president and general manager of Xeon Products & Solutions at Intel Corporation. Graduating from the University of Washington in 2000 in business administration, marketing, and finance, she joined Intel as a financial analyst. She subsequently balanced her time between product marketing and IT management, gaining a holistic view of the server market, data centres, and the end-to-end IT estate.

Intel is an American multinational headquartered in Santa Clara, California. Founded in 1968 by Gordon Moore and Robert Noyce, the company invented the first integrated circuit in 1971, heralding the start of the digital age. Its x86 chipset has become the standard instruction set for personal computers. Intel supports open system architectures and hosts the Open Source Technology Centre.

Confronting a disruptive marketplace

Lisa says the semiconductor market has evolved at a break-neck pace, with new entrants and innovative manufacturing techniques fueling a fierce race to

compete in an industry where the number of transistors in a silicon chip doubles every two years (as predicted by Intel founder, Gordon Moore).

The cost of participating in this sector has risen exponentially, with the cost of building a typical manufacturing plant or 'fab' now exceeding $10bn. The high level of competitiveness in the semiconductor market has led to market consolidation in both the design and manufacturing segments. Intel remains a leader in both segments.

Lisa also refers to the rapid evolution of chip architectures and the advent of graphics and compute processing units. She says artificial intelligence (AI) should be seen as an inflexion point. Data-hungry AI applications will boost the demand for chips further. However, Lisa believes Intel is ready to overcome these challenges and suggests there is no limit to the company's growth potential, even in a disruptive environment.

Responding to market pressures

Lisa is, first and foremost, a customer advocate. She believes leadership is acquired and then retained by listening to customers. By building close partnerships and engaging with service integrators, server manufacturers and corporate customers, Lisa helps Intel to maintain market dominance. Her two-way dialogues have ensured the company creates a close alignment between supply and demand.

She says Intel provides the "brains" of an enterprise, which is a foundation that extends from laptops and other edge devices to central mainframes and out into the public cloud. She believes Intel must be agile and responsive to changing customer requirements across all platforms. This positioning requires a careful balance between hardware and software skills, and an open-source architecture that draws on an ecosystem of specialists. She says "IT is the business" for most modern organisations and executives must live in a cloud-first world.

Managing the Xeon business

Lisa says infrastructure components, such as data centres, are critical to business agility. That's where Xeon plays a crucial role, addressing the end-to-end requirement for computing power and storage. Xeon is a $20bn business and employs about 10% of Intel's total workforce of 100,000 employees.

During the past decade, Lisa has seen a dramatic shift in the role

Lisa Spelman explains how constantly listening to customers helps her navigate Intel's Xeon $20bn business through the choppy waters of the disrupted semiconductor sector.

Lisa Spelman, Corporate Vice President and General Manager, Xeon Products & Solutions, Intel Corporation

Scan code to watch the full interview.

of the data centre, which has moved from being a static asset to a cloud-based architecture that provides agility and scalability. She says artificial intelligence (AI) has led to an acceleration in the demand for high-performance computing during the past five years. Having run Intel's IT infrastructure, Lisa believes a mix of on-premise and public cloud provision is the best way to deliver high-performance computing, even with tenfold increases in demand.

With her sharp focus on customer requirements, Lisa says the Xeon business must accommodate fast-evolving client requirements. These customer requirements include:

- The pressure to reduce energy and water consumption during the manufacture and subsequent installation of semiconductors to meet sustainability targets
- The financial imperative to demonstrate short-term return on investment from new hardware and software that enables digital transformation
- The ability to operate within an open-source ecosystem that can help pull through new sources of value
- The desire to implement open-source infrastructure components across the IT estate

Lisa believes Intel's partnership with Red Hat has profoundly influenced the Xeon business. Intel is recognised as being the number one Linux code contributor. Lisa sees further opportunities from the rapid increase in AI workloads and the need to overcome fresh security challenges, which will require innovations at both the chip and system levels.

Modernising the digital kitchen

As Intel evolves into a full-service platform integrator, Lisa believes talent will be critical to the company's success. She looks for deep expertise in candidates and a strong fit with Intel's culture, where having fun plays a central role. Running infrastructure at scale is a stressful task. She says it's crucial to create a safe space to share ideas.

Defining the qualities of a Master Chef

Lisa spends a large proportion of her time communicating her vision to customers and staff. Her management style is to be a good coach and to show respect for her team. Her greatest joy is to help staff unlock their talents. Intel operates a hybrid work environment, but Lisa wants people who are in the office to feed off each other's energy.

Lisa's style is to demonstrate honesty and integrity to all around her. Being authentic is the best way to build trust. She has learnt to handle crises by adopting a calm attitude, or what she describes as "breathing in." This approach helps her deal with operational challenges that are a daily part of running complex infrastructures.

She advises aspiring leaders to bring their hearts to the workplace, to be true to themselves, and to encourage those around them to be authentic and trusting. Her mantra is to "always stay close to the customer."

VDAB

Using data to help people gain the right skills

Ingredients

- Equipping citizens with the skills to adapt to fast-changing job market conditions
- Launching a digital programme, VIBE, that places data at the heart of business strategy
- Deploying artificial intelligence (AI) and machine learning (ML) to make sense of citizen data
- Empowering a trusted team to run IT operations, which leaves more space for value creation

Preparing the dish

Jan Dobbenie is CIO of VDAB, the public employment service of Flanders, which is the Dutch-speaking area of northern Belgium. Educated with a degree in applied economics at Antwerp University, and having pursued a PhD in economics and IT, Jan joined Procter & Gamble, where he spent 11 years climbing the corporate ladder to reach senior positions in Europe and the US. With subsequent business experience in brewing and energy, Jan then took a dramatic shift in career direction. Motivated by a desire to contribute more directly to society, he joined VDAB five years ago.

VDAB helps citizens find and retain jobs in Flanders. The service supports unemployed people and matches their skills with opportunities across the labour market. The agency also offers career development programmes to another four million citizens in Flanders, helping people acquire new capabilities through training. This focus on development is part of a shift in the balance of VDAB's efforts from 'welfare' to 'wellbeing'—and citizen's data is at the heart of this service transformation.

Creating the right VIBE

After joining VDAB, Jan helped design and launch a transformation programme called VIBE, which supported the expansion of the agency's reach and influence across Flanders. VIBE was based on a recognition that, to reduce unemployment in the region, the agency required a proactive, data-led approach to ensure citizens have the right skills to navigate an ever-changing job market. Jan could see the potential impact of a proactive approach on the social and economic wellbeing of the region.

He began VIBE by developing a 'first-class strategy', which was based on the axiom that every person matters. Every time Jan communicates the vision of VIBE, the first slide in his presentation is about people rather than business or technology. This focus on people fostered a supportive culture at VDAB and laid solid foundations for transformational change. At the heart of the strategy was the belief that a successful job placement requires careful cultural alignment between employee and employer, as well as constant on-the-job education to ensure every citizen remains economically relevant.

To bring his "first-class strategy" to fruition, Jan used AI and ML technologies to match personal data with labour market conditions. This effort required comprehensive digital engagement between VDAB's 80-plus physical branches and the citizens they serve.

Implementing a data-first strategy

The agency encourages every citizen to create and download a CV. A skills engine matches CVs with available jobs and generates a shortlist of employment opportunities. The engine also advises on additional skills and competencies that would extend the reach of the citizen to new opportunities.

Jan recognises the labour market is in constant flux. There are some sectors where demand outstrips supply, such as IT, healthcare, and education. His data-driven approach uses AI and ML to predict where demand might grow in the future. This insight helps citizens prepare for fresh job openings.

Bringing VIBE to the IT organisation

The IT organisation at VDAB employs about 450 staff, with 75 external consultants. Jan is focused on attracting and retaining the best talent. He focuses on "inclusive talent management" to ensure every member of staff enjoys the best possible on-the-job training. He recognises the huge costs associated with staff churn. He estimates that his proactive approach has saved millions of Euros because of higher levels of staff retention. He also suggests

Jan Dobbenie explains how his agency uses artificial intelligence and machine learning to match capable candidates with fresh job opportunities.

Jan Dobbenie, CIO, VDAB

Scan code to watch the full interview.

that stable employment patterns lead to a healthy increase in productivity per staff member.

Jan says becoming a data-centric organisation is fundamental to delivering a first-class strategy at VDAB. Personal data must remain on-premises due to strict regulations, but aggregated information can be held in the public cloud. Having a strong data-centric business foundation enables the agency to share its information with external parties. This capability means VDAB has become a crossroads in the local labour market and is helping to optimise employment prospects for every citizen.

Defining the qualities of a Master Chef

Jan's priority when he joined VDAB was to build a strong management team. This approach means he's been able to delegate many day-to-day IT responsibilities to people he trusts. He believes a successful CIO "stands on the ship's bridge" rather than "being down in the engine room." Delegation gives Jan time to focus on service transformation, which is where the greatest business value lies.

Jan's operating mantra is to adopt a three-phase approach to transformation. The first phase is to have healthy discussions and reach decisions as a group. The second phase is to deliver on these decisions, or what Jan describes as "getting it done." The third phase is to monitor benefits and refine the plan. He likens his approach to Star Trek's Captain Kirk on the starship USS Enterprise, who asks his team "to clarify" and "to make it so" when they plan a new voyage. To avoid failures, Jan advises all digital leaders to experiment quickly and fail cheaply.

Jan says his leadership style is about painting a picture of where VDAB needs to go and ensuring all his staff buy into the vision. He also emphasises the need for a formal structure, with clear roles and accountabilities. Jan prefers order to clutter, including constraints around the number of applications supported across the IT portfolio. His leadership mantra is "out with the old and in with the new."

With respect to aspiring CIOs, Jan promotes the concept of lifelong learning, as he does with every citizen of Flanders: "Always continue to build the skills necessary to join the C-suite and focus on business value rather than technology."

EY UK&I

Using artificial intelligence to accelerate workplace innovation

Ingredients

- Applying AI to eliminate wasteful activities and deliver high-value outcomes
- Using EY Fabric to give staff the tools they need to craft personalised solutions quickly
- Promoting novel ways to fill the data science skills gap with neurodiverse talent

Preparing the dish

Catriona graduated from the University of Stirling with a bachelor's degree in psychology and obtained a master's in the same subject from the University of Glasgow. She also studied at Sorbonne University in Paris. Having led Barclays Bank's first online-banking project during the early 1990s, she became fascinated by human-computer interaction (HCI). She raised money to start her own business, London-based experience design firm Foviance, at 26. Fifteen years later, her firm was acquired by EY and is now known as EY-Seren. Today, Catriona is Client Technology and Innovation Officer (CTIO) at EY UK & Ireland (EY UK&I).

EY is a global professional services firm derived from a merger of Arthur Young & Co and Ernst & Whinney in 1989. It was named Ernst & Young until its rebranding in 2013. Today, EY employs more than 350,000 staff in 700 offices globally. EY UK&I employs 19,000 staff and offers services in four areas: audit and accounting, tax, strategy and transactions, and consulting.

Helping clients with challenges

Catriona says modern businesses face a trilemma of challenges: monetary pressures, such as inflation and

higher interest rates; rising energy costs and the drive to net zero carbon emissions; and disruptions to supply chains caused by rapid fluctuations in customer demand.

As one of the world's largest professional services organisations, EY encounters all three of these challenges when it works with its clients. Catriona says her firm will survive and thrive by offering superior services to its customers through a constant flow of innovations.

EY has established a global centre for innovation that helps distribute a budget of $1.8 billion to fund local initiatives. This investment is backed by a conviction that innovation is a joint responsibility between EY and its customers. Innovations can be packaged and scaled across the firm once a satisfactory outcome is achieved.

Using AI to accelerate innovation

Catriona has been a proponent of artificial intelligence (AI) throughout her career. She believes the latest high-profile developments, such as OpenAI's ChatGPT, are proof of her long-held conviction that the emergence of AI will accelerate the pace of innovation.

She points to two immediate opportunities. The first is to use AI to remove low-value tasks from business-as-usual activities. As an example, she says EY is using AI to codify and analyse expenses, which saves the firm millions of hours of professional and administrative time. AI is also used extensively in forensic examinations to reduce workloads on legal teams.

The second critical use of AI is in creative tasks, where large language models (LLMs) can assist with client work. These algorithmic models can access and interpret vast volumes of information. However, there are challenges. Catriona is concerned that structured and unstructured data sources can be difficult to qualify as unbiased and ethical. Yet there is hope. She points to EY's work with AstraZeneca. EY is helping to introduce strict ethical standards into formulating new drugs and personalised medicines.

Organising the automated digital kitchen

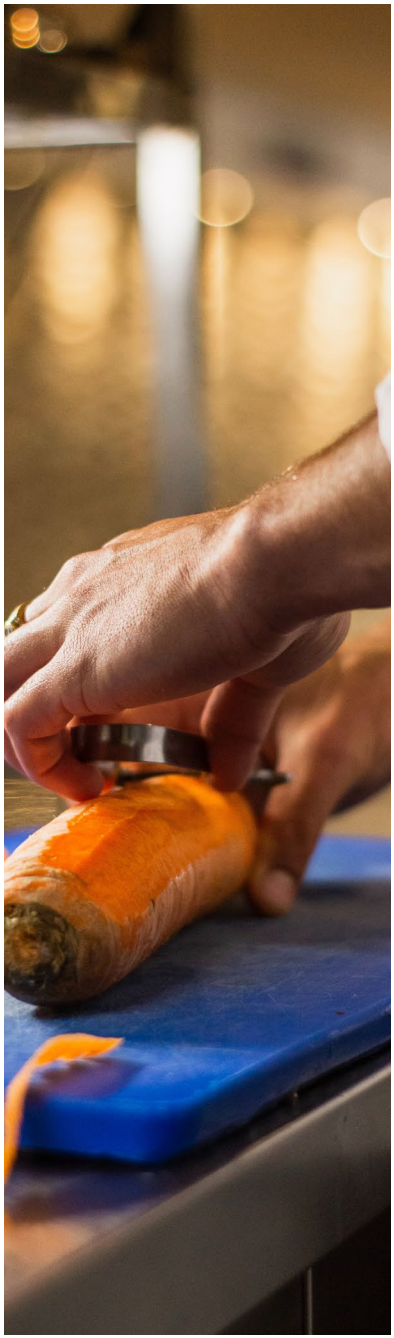
Catriona's background in HCI leads her to believe that practical innovation must be human-centric. Firms must provide adequate guardrails to help professionals deploy emerging tools that benefit customers and society at large. EY's brand is 'Building a better working world.' AI is central in realising this brand promise, as are immersive technologies such as augmented and virtual reality.

The firm has established the EY Fabric platform, which helps

Catriona Campbell believes that emerging technologies will help create a better working world for the people in her firm and its customers around the globe.

Catriona Campbell, CTIO, EY UK & I

Scan code to watch the full interview.



ensure AI tools are deployed safely and quickly. This platform allows thousands of bots to interchange data and operate consistently across the business. Catriona describes this platform as a "walled garden" approach, which provides the "Lego bricks" that EY staff can use to simplify and enhance the quality of their work.

UiPath is a strategic partner that helps EY deploy many of these bots. One such bot is Goldie, trained to answer staff's human resources queries. Goldie reduces the workload on HR teams and enables them to focus on high-value tasks, such as talent development. As part of the EY Fabric, the firm is also increasing automation through low-code technology. Staff can develop applications that satisfy their individual and client requirements in hours or days—and without joining a queue for software resources.

Encouraging neurodiversity

Six years ago, EY built a centre to promote neurodiversity within the firm and help source data scientists from a new talent pool. Given the difficulties many neurodiverse candidates face during the formal interview process, EY encouraged candidates to write essays on why they would be interested in a career with the firm.

Each qualified candidate is invited to a Super Week, where they can better understand the EY community. This focus on neurodiversity has been a great success, with a candidate retention rate of more than 95% during the programme's first five years.

Defining the Qualities of a Master Chef

Catriona is passionate about her chosen career path and the impact of innovation on EY and its customers. She admits her enthusiasm can sometimes mean people are left behind, but she thrives on teamwork and individual mentoring to help everyone maintain the right pace. She has a low boredom threshold and welcomes rapid change. She believes her team will enable EY to stay ahead of its competitors as emerging technologies take hold.

She advises aspiring digital leaders and her children to have a passion for doing things well, help people understand and grasp new ideas, and show humility and kindness to everyone they encounter.

Spicy Chicken and Tomato Bruschetta with Cannellini Beans

Catriona Campbell suggests that AI can accelerate innovation in the kitchen as well as the workplace. This is a recipe she prepared using ChatGPT and the ingredients available in her fridge and cupboards.

Ingredients:

- Leftover roast chicken, diced
- 2–3 tomatoes, diced
- Fresh basil leaves
- 1–2 red chilis, thinly chopped (depending on your spice preference)
- 2 cloves of garlic, peeled and thinly sliced
- 3 tablespoons olive oil
- 1 can cannellini beans, drained or rinsed (or any other beans you have in your cupboard)
- 4–6 slices of sourdough bread
- salt & pepper to taste

Serves 4

Directions:

1. First, prepare the bruschetta mix. Mix the tomatoes, shredded chicken, chopped or torn basil leaves, and red chilis. Drizzle two tablespoons of olive oil and gently toss everything adding some salt and pepper to taste.
2. Pour the remaining olive oil into a medium pan and add garlic. Start heating to make aromatic oil. Once the garlic starts to become golden and fragrant, add the cannellini beans and sauté for a few minutes until they are slightly crisp on the outside. Season with a pinch of salt and pepper.
3. Toast the sourdough bread and once it is warm and crispy, sprinkle some olive oil on top.
4. Assemble your bruschetta: spoon a generous amount of the bruschetta mix, spreading it out evenly, and top with warm cannellini beans. Optionally sprinkle some more basil.

Catriona Campbell's favourite dish.

PLAYBOOK 2

GRASPING THE OPPORTUNITIES AHEAD

As business leaders, we recognise that just four technologies—cloud, mobility, social media, big data—have created immense structural changes to our social and working habits during the past two decades. These technologies have also fuelled the development of Big Tech, a small number of innovative and fast-moving digital behemoths that now dominate global equity markets. But if you think the scale of that transformation has been remarkable, we contend that 'you ain't seen nothing yet!'

We anticipate a second wave of technological advances to create even more fundamental change during the coming decade. This wave will include the continued rise of quantum and edge computing, artificial intelligence (AI), and machine learning (ML), the Internet of Things, blockchain, 3D printing, and augmented and virtual reality.

Understanding the scale of change

Some crucial developments have prefaced the second wave of emerging technologies. The move to cloud offers businesses the flexibility and agility to respond to world events. Today, we can switch on compute capacity in seconds that would have taken months historically. Data analytics has become increasingly influential during the past decade, providing senior managers with crucial insights into research and business performance.

However, at the same time as these advances, it's also true to say that no sector is yet in a good place. Much effort is now being directed to building solid data foundations for modern businesses that will enable powerful new tools, such as AI, to be deployed.

Emerging technologies will support a radical change in business models

The world's most prominent digital leaders tell CIONET that AI is now at the cusp of full-scale commercialisation. However, these data-led advances also raise ethical questions that the CIO community must strive to answer. Trust is a critical factor in any discussion about AI. CIOs and their C-suite peers must think about how to build trust with external parties.

Digital leaders should help organisations monitor and deploy emerging technologies, especially in nascent

phases. Every business should employ a carefully orchestrated process to monitor, apply, and scale new technologies. Identify potential new techniques that can be incorporated into your enterprise architecture. Use these possible solutions to deal with ongoing business problems or as routes to new opportunities.

Looking beyond the two-to-five-year timeframe, our research suggests immersive technologies will play a transformational role. We see a new era emerging, where the fast-developing capabilities of augmented and virtual reality could enable us to be in two places at once. This blend of physical and virtual environments would be a game-changer for business and society.

The role of CIOs in harnessing the power of emerging technologies

The ever-expanding pipeline of technologies means now is the perfect time to innovate. In this fast-changing environment, CIOs must be more entrepreneurial. We must recognise that technology has become the business, and digital leaders stand at the forefront of change.

One of our obligations as CIOs is to ensure the C-suite is fully informed about technological possibilities. Many line-of-business executives have risen through the ranks without sufficient exposure to technology. This is an area where we can make a big difference; mentorship must be a key component of our roles as digital leaders.

Welcome to the Intelligent Era

We are entering a new Intelligent Era of interconnected devices. This machine-to-machine network of more than one trillion intelligent devices will be capable of predicting events and taking action. In 2012, we generated one zettabyte of data annually. By 2025, this total will likely exceed 175 zettabytes due to an explosion in intelligent devices. This data explosion means we will need new tools to exploit our information resources.

Improving risk management and operational resilience

Think about the supply chain. The uninterrupted supply of goods and services is now simply table stakes for successful supply chain management. Delivering this minimum acceptable offering requires real-time oversight of the complex ecosystems that comprise modern physical and digital supply chains. Our research suggests pioneering AI and ML developments will mean we could potentially engineer self-healing supply chains within a few years.

However, the rise of emerging technologies also brings challenges. The ever-growing rise in connectivity means potential attack surfaces continue to grow, especially across cloud-based services. The monitoring of cyber activity is a complex and mundane task. This work's challenging and repetitive nature has led to an exodus of cyber workers in recent years. Yet emerging technologies can also provide answers. AI could help to automate some of the repetitive tasks of cybersecurity, leaving staff to focus on creative, value-adding activities.

As well as high-profile AI technologies, such as generative AI services, the rise of quantum computing presents a challenge and an opportunity. While quantum will help us protect future information assets, the technology could also break modern encryption standards. The continued rise of intellectual property theft by bad actors means data protection will continue to be a big concern for commerce and government.

An expanded role for the CIO

The CIO should act as the orchestrator of tomorrow's complex ecosystems. There are several dimensions to this expanded role, including protecting customer and employee privacy in the emerging era of AI. The EU is already introducing The AI Act to help regulate the use of new and powerful technologies, such as ML.

While only 3% of CIOs occupied board positions in 2003, today's figure is nearly 40%. CIOs will continue moving away from back-office responsibilities towards front-line activities, and beyond into the external environment. CIOs must be curious and entrepreneurial in their day-to-day tasks. In the future, digital leaders will spend more time informing the rest of the C-suite about technology and business developments.

Conclusion: Three big bets for the future

There is, therefore, much work to be done in a short timeframe. The pace of technological change continues to quicken, and we believe digital leaders who want to take advantage of emerging technologies should focus their attention on three big bets:

- AI and ML are evolving quickly into consumer applications that will transform every aspect of our lives
- Immersive technologies, such as augmented and virtual reality, will allow us to be in two places at once
- Web 3.0 and the birth of autonomous decentralised organisations will transform the economic landscape into the new structures of tomorrow

SECTION 2

SERVING UP NEW BUSINESS RECIPES

"Corporations are modernising traditional structures through digital, but this is not enough to ensure survival. In parallel, they must learn to reinvent their businesses by adopting a 'start-up' mentality."

Section One describes how digital technology influences customer tastes and styles. As a recap, we suggest in our Introduction to this year's CIONET Cookbook that the trilemma of challenges around the customer, business, and technology are three gears revolving at different speeds. In this second section, we concentrate on the second gear: the business.

Modern organisations must anticipate and respond to these trends or risk being disrupted and left behind. The best way to deal with this threat is to consider new business models and operating processes. In this section, we review how Master Chefs successfully innovate and automate business activities to attract and retain customers.

Our discussions with Master Chefs through CIONET's Innovation Council suggest that organisations have adopted two different strategies for keeping pace with ever-accelerating market trends. The first is modernising the existing 'factory,' using digital tools and methods to streamline front- and back-office processes. Master Chefs and other executives in the C-suite often refer to this strategy as 'digital transformation.' Most leading Master Chefs work closely with their business partners to digitally transform work practices and product offers.

Charlotte Baldwin, global chief digital and information officer at Costa Coffee, encourages her organisation to invest in digital techniques across the supply chain that bring fresh beverages to consumers in any location. Hans Roth, senior vice president and general manager at Red Hat EMEA, believes people and culture are the secret sauce of continuous business innovation. He favours an open organisation where all voices are heard.

The second approach that Master Chefs are using to keep pace with ever-accelerating market trends is to design and implement new business models. This radical approach calls for a start-up mentality within the organisation, often supported by corporate venture capital. The new business can exploit the scale and scope of the parent company, especially its territories and customers, without the constraints of a functional organisation.

Daniel Gebler, founder and CTO of Picnic, describes how he designed a novel business model using drones and robots to transform the grocery supply chain from farm to fork. The business has grown rapidly and now serves consumers in several European countries. Carlo Bozzoli, Group CIO of Enel, is helping to transform a global utility company from an asset-based business to a software company. He believes this initiative is essential in helping to power the change from fossil fuels to renewable energy.

When we look closely at the digital transformation of existing organisations, we learn from our Master Chefs that technologies can help to streamline critical processes within front and back offices. Data analytics and CRM tools in the front office can help businesses gain valuable insights into customer preferences and emerging market opportunities. Digital platforms can expand the reach of a business by allowing it to sell products through diverse electronic channels. The Internet of Things, meanwhile, can help a business monitor physical assets in the back office and enables predictive maintenance.

Jochen Göttelmann, CIO of Lufthansa Cargo, suggests the booking process is the critical differentiator in his global logistics business, as does Christian Palomino, global IT vice president of Meliá Hotels International in the hospitality sector. Both Master Chefs have rebuilt their core reservation systems to improve operational agility. Stefan Domsch, CIO at TÜV SÜD, uses digital techniques to augment and improve his company's inspection and certification processes. Arlene Buehler, CIO and CDO at DB Cargo uses advanced camera devices and the Internet of Things to optimise asset usage.

The Master Chefs demonstrate how new digital ingredients can be combined to produce delicious business models. However, the entire menu remains a work in progress. European countries are still challenged by economic and productivity stagnation. The race is on to apply new digital techniques that will help our businesses compete with aggressive competitors across Asia and the Americas.

THREE
BUSINESS INNOVATION

Daniel Gebler, founder and CTO of online supermarket Picnic, says in this edition of the CIONET Cookbook that "Technology is business, and business is technology." As is made clear by our Master Chefs in the following section, the smartest digital leaders use technology to help the C-suite deal with the seismic changes occurring in our external business environment.

We contend that business innovation takes place in two distinct categories. The first category—covering Costa Coffee, Enel, and Picnic in this section—involves the digital transformation of traditional businesses to enable innovation. The second category—drawing on Red Hat and KPN—involves the continuous innovation of technology businesses.

Let's first consider the recipes focused on the digital transformation of traditional businesses, which aims to provide a platform for innovation.

Charlotte Baldwin, global chief digital and information officer at Costa Coffee, says hybrid working has changed how people consume beverages. Other external factors, including the increasing cost of raw materials and energy, rising staff wages, and new government policies around sustainability, have added fresh complexity to supply chain processes. She has worked with the board to invest in digital technologies, such as AI, that enable the business to respond to broader macroeconomic changes.

Carlo Bozzoli, global CIO at Enel, is helping his company transform from fossil fuels to renewable energy resources across more than 40 countries. He describes this journey as transitioning from an asset-based business to a software company, where new products and services are configured quickly by converting IT applications into reusable business products. Moving to the cloud has enabled processes and business models to be re-invented quickly and effectively.

Daniel Gebler has taken a different approach to business innovation. Instead of transforming an existing retail business, he recognised that online food shopping in the Netherlands needed to catch up to more advanced markets, such as the USA and China. This reality prompted him to establish a new digital business, Picnic, which uses robots and drones to automate food movement from "farm to fork." Today, Picnic employs 300 programmers to deliver continuous service innovations.

In the second category, which focuses on the continuous innovation of technology businesses, senior executives at Red Hat and KPN describe the techniques that have helped their businesses to grow and flourish in a fast-moving environment.

Hans Roth, senior vice president and general manager at Red Hat EMEA, believes people and culture are an innovative business's "secret sauce". He says everyone must be heard in what he describes as an open organisation. This openness extends to the ecosystem of suppliers and customers who emulate Red Hat's inclusive culture. He ensures open software is available to all parties to ensure transparency across the supply chain.

Artie Debidien, CIO of consumer, wholesale, and enterprise at KPN, understands that telecommunications operators must constantly adapt to technology-led innovations, including 5G and software-defined networks. She says technology is the "oxygen" of the business, which enables all staff members to assist in an almost constant process of change: "Innovation is a dancefloor where everyone should participate."

Despite noticeable sector and business maturity variations across our case examples, this section clearly demonstrates how technology can enable business innovation. In each recipe, cloud platforms provide the necessary fabric for modern applications, processes, and business models to be weaved together. Agile development methods help accelerate innovation, and open cultures foster a collective spirit that allows these businesses to stay one step ahead of the competition.

Costa Coffee

Creating the perfect blend for digital transformation

Ingredients

- Replacing the term 'IT' with 'digital' to embrace a wider set of competencies
- Recognising retailers must be digital businesses if they want to grow and prosper
- Communicating regularly to engage everyone in the digital transformation journey

Preparing the dish

Charlotte graduated with first-class honours in Politics and Spanish from Staffordshire University. She honed her passion for digital transformation in a range of leadership roles. These positions crossed sectors and included stints at legal firm Freshfields, health insurance specialist Bupa, publishing company Pearson, and financial services giant Thomson Reuters. In June 2022, she was appointed global chief digital and information officer at Costa Coffee.

Costa Coffee is a British coffeehouse with its headquarters in Buckinghamshire, England. It was founded in London in 1971 by Sergio Costa as a wholesale operation supplying roasted coffee to caterers and specialist Italian coffee shops. Whitbread acquired Costa in 1995 and sold it to the Coca-Cola Company in January 2019. Costa now has more than 4,000 coffee shop outlets across 31 countries. The company also runs 6,100 Costa Express vending facilities. Costa is the largest coffeehouse in the UK and the second largest chain globally.

Understanding retail challenges

Charlotte says the transition to the post-COVID age has involved a range of challenging factors for retailers, including the increasing cost of raw materials and energy,

instabilities in global supply chains, rising staff wages, and government policies around sustainability. These factors mean retailers need an adaptive business model that is underpinned by digital technology.

Take the switch to hybrid working, which has altered consumption patterns at Costa and led to demand shifting from city centre coffee shops to a plethora of urban locations. The company must support these shifts in consumer behaviour and provide greater convenience of access, such as via drive-through outlets, higher-value products, and a growing demand for immersive experiences, including through the metaverse. Costa also recognises the need to engage closely with younger customers to continue expanding its business.

Charlotte has worked with her board to increase investment in digital technologies. She says a short-term investment approach will not protect the business and help it to grow in the longer term. She has convinced her C-suite peers that Costa must future-proof its business by undertaking digital transformation across all channels to market, whether those are business-to-business (B2B) or business-to-consumer (B2C) relationships. The company has made a significant step in this direction by developing a class-leading loyalty programme and mobile app.

Undertaking digital transformation

Charlotte's digital transformation programme has four key pillars. The first is a strong focus on data, which she believes is a key revenue driver for future growth. Costa is applying the latest data-led techniques, such as artificial intelligence (AI) technologies from OpenAI, to discover new sources of value. Charlotte believes AI can help to accelerate data analytics and unearth insights that allow Costa to stay ahead of its competitors, such as by finding new coffee shop locations and providing franchisees with the latest point-of-sale capabilities.

The second pillar is to convert monolithic technologies, such as on-premises ERP systems, into composable components located in the public cloud. Charlotte believes software-as-a-service (SaaS) products in key areas, such as CRM, provide a pathway to agility and adaptability. Embracing the cloud and SaaS also allows her line-of-business colleagues in product marketing and digital commerce to work with greater efficiency and productivity.

The third pillar is to invest in consumer applications that encourage personalisation and engagement. Costa's pioneering mobile app allows the firm to push out innovative features to its customers, including a 'create your own drink' competition.

Charlotte Baldwin is drawing on her leadership experiences from a broad church of sectors to brew a four- step process for digitalisation success.

Charlotte Baldwin, Global CDIO, Costa Coffee

Scan code to find out more about Charlotte Baldwin.

The fourth pillar is to develop a B2B digital marketplace. Costa is keen to take advantage of parent company Coca-Cola's global network of bottlers and distributors. The company is also eager to provide better support to franchisees by giving them deeper insights into consumer behaviour. Overall, Charlotte believes being digital makes doing business with Costa easier.

Modernising the digital kitchen

Charlotte is keen to avoid using the term IT. She is much happier embracing the term digital, which she suggests is much more pertinent to the post-COVID business environment. One of her first steps, when she joined Costa, was to improve operational efficiency by reducing costs. She has accelerated the move from legacy to modern application platforms by pursuing the adoption of Agile methods, such as DevOps, across the organisation. Agile approaches allow her staff to find innovative solutions to business problems.

To execute her digital transformation programme, Charlotte focuses on three value streams: digital consumer; enhanced marketing channels (business and consumer); and enterprise services. She exploits a network of sensors in the company's vending machines to boost maintenance and product availability. Finally, she has introduced three competencies within her organisation: data sciences; digital transformation, and technology (including security).

Defining the Qualities of a Master Chef

Charlotte's passion for digital transformation is infectious. She communicates with people in her team and across the business regularly to reinforce her vision of how a digital business should operate. She believes that becoming digital will produce a strong return on investment and help to grow the top line.

She believes there are six ingredients for digital success. The first is collaborating with peers across the organisation. The second is effective communication at all levels. The third is showing genuine passion and enthusiasm for transformation. The fourth is centering her team's efforts around customer needs. The fifth is being obsessive about growth while recognising there is no other option. The sixth and final ingredient is setting a fast pace.

Charlotte believes that successful people are resilient to life's ups and downs, both in business and at home. She tells her children they must care about others. Charlotte says the successful workplace of the future will be defined by diversity. She says female leaders possess a key advantage—a strong emotional quotient.

Enel Group

Changing an asset orchestrator into a software company

Ingredients

- Leading a "deep transformation" from an asset-based utility to a software company
- Moving 100% to the cloud to support a platform-based approach to applications
- Creating Agile hubs of business and IT professionals to prioritise a backlog of work
- Using sustainable processes to support Enel's aim of net zero emissions by 2040

Preparing the dish

Carlo has a degree in economics from the Università degli Studi Guglielmo Marconi. He started his career with Enel Group in 1984. During almost four decades with the company, he's held a variety of senior IT leadership positions. He became global CIO in 2014.

Enel is playing a key role in the global energy transition from fossil fuels to renewable sources. The company is one of the biggest private utilities in the world and it serves 75 million customers across 40 countries. Enel manages about 100 gigabytes of capacity globally and more than half comes from renewable sources.

Undergoing deep transformation

Enel has dealt with multiple challenges during the past few years, including the coronavirus pandemic, Russia's invasion of Ukraine, volatility in energy prices, and weak global supply chains. As a multinational business, the firm must manage its operations across highly varied local markets. Add in the ongoing energy transition and the scale of the challenge is clear.

Carlo is leading a "deep transformation" to change Enel from an asset-based utility firm into a platform-based

software company. By building on the cloud, and by using a mix of off-the shelf tools and a platform-based approach, he's standardising applications to increase efficiency and raise scalability.

Moving to the cloud

Enel's digital transformation began in 2014 with a decision to move to the cloud. After two years of research and preparations, the IT team started its move on-demand in 2016. By 2018, the transformation was complete and 100% of the firm's IT platforms are now in the cloud. As the business embraced the cloud, Carlo's team worked to rationalise, optimise, and reduce enterprise applications by 40%.

The significance of this shift should not be underplayed: Enel's move to 100% cloud five years ago was not just the first by a major utility but also the biggest transition by any company anywhere. Today, the company pursues a multicloud strategy across storage and software services. Carlo says Enel's move to the cloud allows the company to focus on its platformisation strategy, which it has been pursuing for the past two years.

Building the Enel Digital Platform

Carlo says Enel needed a new way to manage and control its mix of off-the-shelf and tailored bespoke applications and become a software-driven company. The company deployed the Enel Digital Platform, where all application assets—whether purchased or developed in-house—are delivered as products to the business.

Core applications, such as Salesforce and ServiceNow, are installed vertically across the business rather than implemented horizontally in silos. Carlo's team has used the platform-based approach to reduce development time by 25%, improve software quality by 65%, and cut development costs by 30%.

He wants the internal IT team to have even more ability to control and deliver software. He estimates about 70% of software code could be re-used in other applications. Microservices allow the IT team to develop code once and then use it across other applications.

Proving credibility

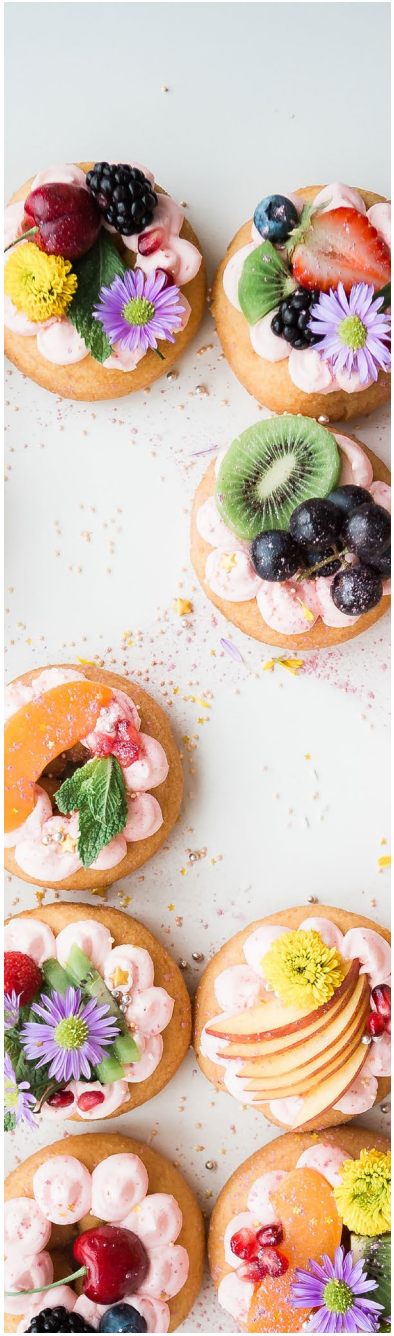
Carlo says turning an energy firm into a software company involves a huge change. For many years, IT was seen as a cost centre rather than a value generator. He says the secret ingredient for changing the mindset about IT delivery was developing credibility as a resilient partner.

The shift to cloud proved the benefits of digital transformation and changed perceptions. Enel's chief

Carlo Bozzoli explains how his digital transformation strategy is turning a traditional utility firm into a platform-based company that'-s focused on long-term sustainability.

Carlo Bozzoli, Global CIO, Enel Group

Scan code to watch the full interview.



executive sponsored the programme and supports technology-led change. Today, technology takes part in boardroom conversations and strategic business decisions.

Changing the team

Carlo has also driven deep change within the technology department. He has created Agile hubs within each line of business, which are co-led by demand-side and IT delivery specialists. These hubs manage and prioritise a backlog of work. Carlo and his team spent 12 months talking with people around the world to ensure they understood the benefits of Agile.

When Carlo became CIO in 2014, there were 1,400 IT professionals at Enel. Today, there are 3,200. That number will reach 4,200 by 2024 due to a big focus on insourcing. Carlo wants people who have the right attitude, not just experience. The company checks 1,000 CVs for every seven IT professionals it hires.

Prioritising sustainability

Internal talent supports Enel's energy transition efforts, including leveraging renewable sources and supporting new business models. Enel will close its last coal-powered plant by 2027 and will reach net zero emissions by 2040.

Carlo says CIOs must ensure application development and procurement processes don't add to emissions. His team looks across the supply chain, including its cloud providers, to track and trace sustainability targets. Their ongoing efforts to re-use components are part of Enel's transition from an asset orchestrator to a software-driven company.

Defining the qualities of a Master Chef

Carlo says CIOs must work with the business to discover how technology creates benefits. He adopts an open and agile management style, spending time with co lleagues across the business to ensure they can "join the dots" between strategy and daily activities. He encourages people to take a step back and ensure their work always fits with the strategy.

In terms of leadership style, Carlo describes himself as a demanding boss who provides clear and direct feedback. While he expects his team to work hard, he wants them to have fun and grow at a personal level. His personal mantra is: "Take one step, then another, then another." He wants his team to have the courage to do what is necessary to move forwards.

Carlo advises next-generation leaders to be humble, curious, and to get used to "un-learning" often and quickly. A flexible mindset is critical to success.

Picnic

Delivering a hyper-growth business in a traditional sector

Ingredients

- Recognising that technology is business, and business is technology
- Building software and data architectures that are supportive and scalable
- Setting stretched operational and strategic targets every step of the way
- Organising for growth and building internal capabilities to meet new horizons

Preparing the dish

Daniel Gebler is founder and CTO of Picnic, a hyper-growth food delivery company based in the Netherlands. Daniel took a degree in computer sciences and completed an MBA before starting his career as a software developer. Rising to the post of director for research and development, Daniel took a sabbatical to complete a doctorate and then founded Picnic in 2015.

Picnic is an online retailer that specialises in food delivery. From its inception, Picnic's mission has been to deliver food to the door of its customers at a price below that of physical retail outlets. Having grown quickly, the company now serves more than two million customers in the Netherlands, France, and Germany. It employs fully robotised warehouses to help eliminate costly manual work. Picnic's revenues exceed one billion Euros and it has received awards for innovation and business excellence.

Addressing a market gap

When he founded Picnic in 2015, Daniel recognised that online food shopping in the Netherlands represented

just 5% of total market volume. This proportion was very low when compared to nations such as China and the USA, where online food retailing accounted for 20%. Despite the presence of large competitors, including Ahold and Carrefour, Daniel believed he could exploit the gap in online retailing. His aim was to use technology to help Picnic sell food to Dutch households and to potentially move into other areas of service provision.

One of the key challenges he faced was to reduce the number of human touch points between "farm and fork" from around 15 to just one. Daniel recognised that humans were effective at picking food products. However, he believed robots and drones could help automate the movement of food across the supply chain from the warehouse to the end customer. He also spotted an opportunity to use delivery vehicles to collect unwanted fashion items and reduce the high cost of returns for retailers.

Daniel's vision has fuelled a powerful growth engine. In just eight years, Picnic has grown from a start-up to a billion-Euro company, serving three of Europe's major national markets.

Putting digital at the heart of the business model

Picnic is hugely reliant on software and employs more than 300 programmers. "Technology is business, and business is technology," says Daniel, who says Picnic is more like a software company than a logistics firm. His company ships millions of items each morning and advanced planning systems play a crucial role in translating customer data into accurate shipping schedules.

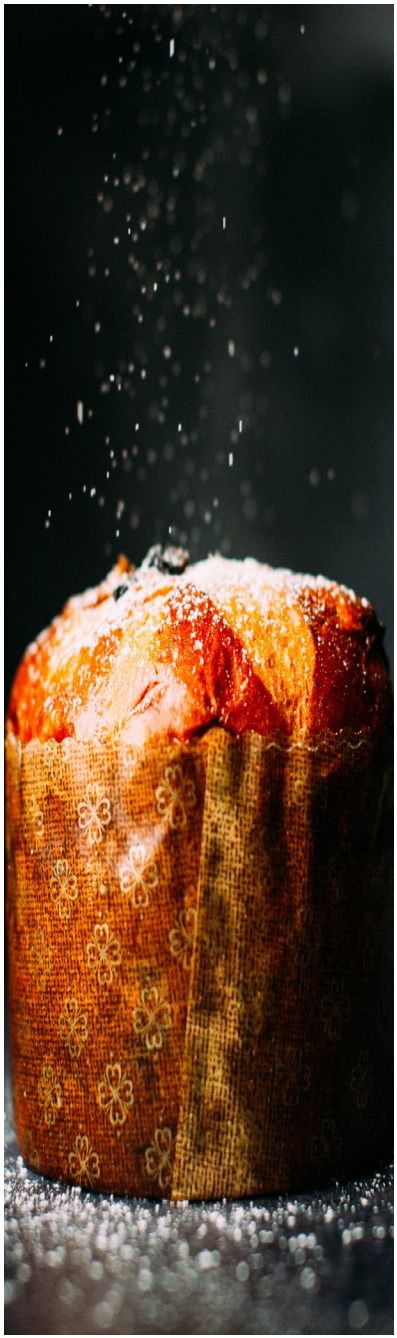
One of the keys to Picnic's success is the company's simplified IT platform. Daniel has maintained a narrow technology stack since the company's inception, which relies on a single cloud platform and just one software language. He believes a simple architecture can be scaled effectively as business volumes grow. Proof for the validity of this theory comes in the form of Picnic, where the firm's data architecture has absorbed significant growth in customer numbers and shipping volumes since 2015.

Daniel has added tactical solutions to his technology stack as the company has matured. Deep learning techniques are used to analyse data generated across the supply chain. The insight from this process boosts performance and ensures Picnic's costs stay below those of physical retail outlets. Daniel is confident his clear, simplified approach to technology will support the business as it expands.

Daniel Gebler explains how he's used a simple and scalable architecture to help turn an online retailer that he founded in 2015 into a billion-Euro business.

Daniel Gebler, Founder and CTO, Picnic

Scan code to watch the full interview.



Fashioning a hyper-growth organisation

Just six months ago, Picnic had 200 software engineers in 20 twenty teams. Today, Daniel has reorganised his software team into just four main clusters that deal directly with the consumer stack, data solutions, the supply chain, and foundation platforms. This new organisation has reduced the management burden and introduced a coherent approach to work.

Daniel is keen to build software expertise internally rather than relying on external resources. He engineered his own version of Python to create a seamless connection between software and data. He is also eager to use low-code/no-code tools to engage Picnic's 15,000-strong workforce in the software development process.

To be successful, Picnic must continue to attract talent. Daniel communicates a meaningful and challenging proposition to potential candidates. He also focuses on retention by enabling his staff to attain new levels of responsibility and performance. He challenges his staff to define success and embed organisational learning into the business culture.

Picnic has a tight and highly capable executive team that includes five business leaders who are responsible for operations, technology, legal and commercials, customers, and finance. The team allocates budget according to opportunity rather than using traditional planning methods. This approach plays a crucial role in helping the hyper-growth business exploit fresh opportunities.

Defining the qualities of a Master Chef

Daniel sets operational priorities and defines a clear strategy for his fast-growing team. As a software engineer by training, he uses metrics such as operational performance to set stretched targets. Currently, Picnic's IT assets are used at between 50% and 60% of capacity. He is driving the organisation hard to achieve 85% capacity through continuous innovation in software processes.

In terms of management style, Daniel leads by example. He has high personal expectations but also expects great things from his team. While recognising that remote-working styles are now prevalent across the software industry, he encourages staff to spend time together in the office to foster creativity and innovation.

Daniel advises aspiring IT professionals to work on something meaningful and to show conviction to their teams. He says technology is merely a tool and that true disruption is embedded in the products and services a business creates.

Red Hat

Creating an open culture that fosters innovation and growth

Ingredients

- Making sure people and culture are the "secret sauce" of a recipe for success
- Working with partners and customers to develop flexible and available solutions
- Establishing a vision that is delivered by autonomous and empowered teams

Preparing the recipe

Hans Roth has degrees in economics and finance from the Euro Business College in Hamburg and the University of Applied Sciences in Utrecht. He started his career at retailer C&A and then specialised in consulting with KPMG, IDS Scheer, and HP Enterprise. In 2016, he joined Red Hat, where he is senior vice president and general manager for EMEA.

Red Hat is an enterprise software company with an open-source development model. The company was formed 30 years ago and its revenue has doubled during the past five years. The firm employs 20,000 people. Hans says Red Hat's growth is based on three core components: its people and culture; its ecosystem, including partners and customers; and its innovative, open-source development model.

Building an open culture

Hans says people join Red Hat because they want to make a positive impact. He describes people and culture as the "secret sauce" of the firm, with employees sharing a passion to help the business grow. He says that, unlike other resource-rich IT

Red Hat's success is built on three core components—its people, its ecosystem, and its openness. Delivering long-term success means staying true to these principles at all times.

Hans Roth, Senior Vice President and General Manager, Red Hat EMEA

Scan code to watch the full interview.

companies, Red Hat's key asset is its collective brain power.

His colleagues overcame the challenges posed by not working in close proximity during the coronavirus pandemic by reminding themselves of Red Hat's open culture every day. Diversity and inclusion are more than just buzzwords at Red Hat. Rather than focusing on the significance of titles, everyone has a voice and their opinions are heard.

Fostering an ecosystem

From early relationships with manufacturers to the certification of its nascent software, Red Hat's ecosystem of partners and customers have always played a crucial role in the growth of the company. Today, Hans says the ecosystem is even more important. The company works closely with its partners. These relationships are built on an open and inclusive culture.

He says Red Hat works with its partners to create choice for customers. Availability is another ecosystem priority. Whether it's working with distribution partners or cloud hyper-scalers, the company makes its software available on as many platforms as possible. Finally, he says the ecosystem plays a key role in helping to expand the broad use of Red Hat's technology.

Delivering open-source capability

Hans says the open hybrid cloud is at the core of Red Hat's activities and the technological availability it provides to customers. The open hybrid cloud provides sovereignty. The approach gives customers the power to make decisions because it allows applications and workloads to be interoperable across technology platforms and infrastructures.

In the modern digital age, Hans says CIOs must establish sovereignty and maintain control of their data and algorithms. Effective sovereignty entails being able to decide your own destiny. Sovereign businesses can make their own decisions about where data is held, where applications are run, and on what types of infrastructure.

Hans recognises that sovereignty is also a big challenge for Red Hat. Providing flexibility and choice to customers means ensuring the company's software is standardised and can run on all platforms. Whether on the cloud or in internal data centres, Red Hat wants to give its customers the power to work across networks and national borders.

Understanding the role of the modern CIO

Hans spends a lot of time speaking with CIOs. He says the traditional,

operational-focused role of the CIO is being usurped by a new focus on innovation. Successful CIOs are involved in high-level conversations about improving business models through the use of technology.

These conversations also involve a range of other key topics, such as security, cost, and sustainability. Hans says the key issue for CIOs going forward is to think carefully about how innovation will fuel business growth. Rather than just focusing on removing legacy systems, CIOs must embrace the next wave of innovation.

Leading from the front

Whether it's working with partners or mentoring teams, Hans is focused on delivering a positive impact for Red Hat's customers. He runs the field organisation in EMEA, which means dealing with everything associated to customer sales, revenue leadership, and technology adoption, especially via partners.

The most challenging element of his role is staying true to Red Hat's cultural heritage. While the company wants to make sure all its employees' voices are heard, it's also a commercial organisation and some element of conformity is crucial. Hans describes his role as a "balancing act," where he provides an equilibrium between freedom and accountability.

He says the key to Red Hat's long-term success is ensuring it continues to attract a diverse range of people who are attracted by the company's culture and openness.

Defining the qualities of a Master Chef

With his broad EMEA responsibilities, Hans manages diverse teams across disparate geographies. He describes his management style as "visionary." He enjoys working with staff to develop a route to success. This process involves creating a joint understanding of what his vision means and how it will be delivered by autonomous and empowered teams.

Hans' leadership mantra is "it's alright"—it's alright to try and fail or to innovate and continue. The most important success factor for any leader is to keep on learning. Integrity is a crucial element of his leadership style. Like Red Hat as a business, Hans strives for openness and respect, so that his teams can work effectively together to deliver the vision he creates.

He advises next-generation leaders to have a vision, but to not get stuck. Have a plan about where you want to go and remain open to change. Take on leadership opportunities when they emerge. He also says professionals should build networks of trusted advisors who can guide them during their careers.

KPN

Using sustainable innovation to power new business opportunities

Ingredients

- Delivering sustainable innovation that produces constant improvements for customers
- Building an Agile and entrepreneurial culture in a structured approach to innovation
- Working with the business to identify strong use cases for emerging technologies

Preparing the dish

Artie's impressive academic background includes studying digital technology at MIT and global politics at Yale. Most of her 25-year career in IT has been spent in the financial services sector, working for start-ups and blue-chip banks, including a stint as CIO of NN. She became CIO of consumer, wholesale, and enterprise at KPN in May 2022. She manages B2C contracts and works alongside another CIO at the firm who manages B2B.

KPN is a Dutch telecommunications company that serves major enterprises, consumers, and wholesale providers. The company employs 11,000 people. Artie says KPN's underlying infrastructure helped people stay connected during the coronavirus pandemic. The priority now is to build on those foundations and deliver innovative customer services.

Focusing on sustainable innovation

Whether moving from 4G to 5G or onto next-generation networks, Artie says telecommunications is characterised by change. She says technology is the core of the business and describes innovation as the "oxygen" that powers KPN.

Artie believes disruptive innovations are rare. KPN's innovation model is focused on sustainability and delivering constant improvements for customers. The business ensures its services are constantly re-invented, whether that's providing connectivity across the Netherlands or creating a positive social impact globally.

KPN has an innovation board that connects everyone in the business to long-term change. However, Artie also believes innovation is the responsibility of everyone in the business. She says this broad accountability means ownership for change should never sit in one place: "Innovation is a dance floor where everyone should take part."

Putting innovation into action

Artie's innovation programmes are organised across five experienced teams. The media experience team works on television and broadcast innovations, such as TV without hardware and gaming applications. The business technology experience team develops operational platforms, while the enterprise experience team creates an end-to-end approach for internal applications, whether that's for HR, marketing, or finance.

The digital experience team boosts customer engagement processes. Finally, the tech base team uses cloud and engineering capabilities to provide a scalable technology platform for modern business operations.

Artie says innovation requires structure. KPN has an Agile and entrepreneurial culture that allows great ideas for digital and data to bubble to the surface. She says a tight connection between corporate and digital strategy ensures the company works on innovation initiatives that deliver the most value. KPN also draws on a strong ecosystem of external partners.

Exploring AI and connectivity

KPN already uses artificial intelligence (AI) to improve experiences, such as predicting customer demands proactively. Artie says perceptions of AI have shifted with the rise of generative models and ChatGPT. She says regulation is crucial, and the effective use of emerging technology requires a balance between maintaining security and exploiting data.

While generative AI is becoming popular quickly, Artie says introducing technologies like ChatGPT won't lead to a rapid reduction in workers. Artie believes in the tactical use of AI, where repetitive tasks are automated, and staff spend more time on high-value activities.

Artie Debidien's structured approach to innovation allows her technology team to deliver fresh products and services to internal stakeholders and a broad range of external customers.

Artie Debidien, CIO, KPN

Scan code to watch the full interview.

The company has a dedicated team that thinks carefully about making the most of connectivity and the Internet of Things. Artie says KPN uses data across various use cases, including monitoring infrastructure, preventing theft and analysing transportation routes.

Exploiting automation and data

KPN has taken a bottom-up approach to robotic process automation (RPA). Rather than senior executives trying to work out how RPA might be applied, the use cases for automation emerge from employees who work on the company's products and services daily.

Staff began experimenting with RPA to find these use cases. Today, automation is used to create process improvements in enterprise experiences, such as logistics and billing, where the company combines a range of packages for consumers, including TV and Wi-Fi services.

KPN constantly searches for new ways to make the most of digital technology. The exploitation of data is a cross-organisation responsibility. Data owners sit in all company areas and create a close connection between lines of business and technology.

Organising the IT kitchen

About 3,500 people at KPN work in IT. Around 1,000 of these employees work for Artie. She runs Agile teams and expects her direct reports to take a forward-looking approach to the work the technology teams undertake and broader business processes.

Her five experience centres are run by self-organising teams governed by an IT director. These directors oversee IT managers, who run five DevOps teams that work on specific projects. Each team includes five to eight people, with a product owner, scrum master and DevOps professionals.

The teams seek service improvements iteratively. Artie loves this Agile approach because it helps IT managers foster self-organisation. She says product owners set the vision, scrum masters understand burn rates and goals, and DevOps professionals build the right services for the business.

Defining the Qualities of a Master Chef

Artie's switch from finance to telecommunications has given her a new set of business experiences. KPN is a digital business at its core but much of the knowledge she acquired in finance, including across infrastructure, billing, and architecture, is helpful in telecoms.

She develops high-performing teams that include a range of skills, backgrounds, and personal characteristics. Artie expects professionals to manage their careers, reflect on their competencies, and seek solicited coaching from their managers. She fosters openness, where team members can say what works well and what doesn't.

Artie describes herself as a transformation-focused CIO. While she's a demanding and fast-thinking boss, she never forgets the professionals who help her succeed as a CIO.

Mediterranean-style Potato Delight

Ingredients:

- 6 large potatoes, peeled and cut into medium-sized chunks
- 2 eggplants, cut into larger pieces
- Olive oil for brushing
- Salt for seasoning
- Fresh chives for garnish
- 3 large red onions
- Tomato passata (strained tomatoes)
- Fresh herbs (oregano, thyme, rosemary)
- Granulated garlic
- Chilli flakes
- Sugar

For Tzatziki:

- 2 large fresh cucumbers
- Greek yoghurt
- Garlic cloves
- Lemon
- Extra virgin olive oil
- Fresh basil

To Serve:

- Green olives
- Chilled white wine
- Fresh baguette

Sławomir Soszyński's favourite dish.

Serves 4

Directions:

1. Preheat the oven to 200°C. Begin by boiling the peeled and cut potatoes in salted water for 8 minutes. Drain.
2. While the potatoes are boiling, brush the eggplant pieces with olive oil and bake them at 200°C for 15 minutes on a baking sheet lined with parchment paper. Remove the eggplants from the oven, set them aside, and sprinkle with salt. Place the partially boiled potatoes on the same baking sheet, brush with oil, and bake for about 30 minutes or until they turn golden at 200°C.
3. Prepare the sauce. Mix the tomato passata with about a teaspoon of oregano, thyme, rosemary, granulated garlic, a few chilli flakes (adjust to taste), less than a teaspoon of salt, and a teaspoon of sugar.
4. In a large ovenproof dish brushed with oil, gently combine the eggplants with the roasted potatoes. Sprinkle with chopped fresh chives and add red onions peeled and cut into chunks. Pour the prepared sauce over the mixture, drizzle with olive oil, and gently combine. Bake again at 200°C for about 20 minutes. The dish is ready when you smell the aroma and see the edges turning golden.
5. Prepare tzatziki. Grate 2 fresh large cucumbers, squeeze out excess water, and add minced garlic, Greek yoghurt, a generous drizzle of olive oil, juice from half a lemon, and salt. Feel free to add some fresh herbs (basil, dill, parsley, or mint).
6. Serve the dish with olive oil, fresh baguette, tender Greek olives, and chilled white wine.

FOUR
PROCESS AUTOMATION

In addition to helping innovate business architectures and models, Master Chefs see their primary role as applying digital techniques to streamline the processes that underpin business efficiency and effectiveness. Depending on the sector, these techniques come in different shapes and sizes, spanning front, middle and back-end activities. The task for our Master Chefs is to identify the digital techniques that can most readily influence competitive positions.

In this section, we sample four tasty recipes spanning entire organisations and their partners. The first two recipes encompass customer-facing processes that help grow revenues by attracting and retaining consumers and commercial partners. The second two recipes focus on operational processes that improve organisational efficiency and deliver multi-million Euro cost savings.

Let's turn first to the recipes that concern customer-facing processes. Our recipes here elucidate how the volatility of business and consumer spending in the post-COVID age has focused a great deal of attention on reservation and booking processes. Both Meliá Hotels and Lufthansa Cargo show how organisations can respond effectively to fast-changing market conditions.

Christian Palomino, global IT vice president at Meliá Hotels International in Spain, explains how his company's older reservation system was unsuited to the rapid pick-up in demand following COVID. By adopting a cloud-native approach to applications that delivers higher business agility, Meliá can now respond to rapid variations in transaction volumes without further investing in on-premises hardware. Modernising the reservation systems also enables data-driven data decisions that improve room occupancy and help personalise customer experiences.

Jochen Göttelmann, CIO at Lufthansa Cargo in Germany, says the booking process is a critical differentiator in the logistics sector. Recognising the limitations of a booking system that dated back to the early nineties, he boldly decided in 2018 to rebuild its applications and processes on Microsoft Azure in an Agile environment. This project was the first cloud-native development in the Lufthansa Group. One of the primary benefits of the initiative has been a transformation in customer experiences provided through online portals and API interfaces.

In the final two recipes in this section, we turn to the pressure for improved productivity across staff and

physical assets, and the potential for digital leaders to apply data-driven decision making to operational processes. The Master Chefs at TÜV SÜD and DB Cargo illustrate this trend excellently.

Stefan Domsch, CIO at TÜV SÜD in Germany, uses digital techniques to augment and improve inspection and certification processes. By using artificial intelligence to screen paper documents for relevant information, inspectors can now spend more time fixing elevators on-site. Stefan's team is also developing devices that monitor facilities proactively to reduce the need for inspections. In the case of chemical plants, this digitalisation can save millions of Euros. Across all these activities, the consolidation of ERP systems and data is a critical enabling factor.

Arlene Buehler, CIO and CDO at DB Cargo in Germany, says capacity management is a critical process for modernisation. She has encouraged her team to explore a range of new technologies, such as the Internet of Things and advanced camera technologies, which can monitor asset usage and movement. She has also introduced a data lake that underpins these advanced techniques and enables data-driven decisions to be enacted across the enterprise. Arlene is keen to explore how artificial intelligence can be used to eliminate manual work and retain talented staff.

The conclusion from these recipes is clear: Master Chefs recognise that cloud platforms and Agile development methods are advancing rapidly, and they are using these flavoursome ingredients to enhance productivity and accelerate revenue growth.

Meliá Hotels International

Using IT to underpin business transformation

Ingredients

- Addressing gaps between core activities, such as reservations and product development
- Exploiting modern technologies to transform core processes and systems
- Adopting a cloud-native approach that delivers higher levels of business agility
- Recognising that success is a "team sport" and everyone needs to feel like a star

Preparing the dish

Christian Palomino is the global IT vice president of Meliá Hotels International. With a degree in technical engineering and information systems, he joined Meliá in 1999 as a software analyst. After covering many different aspects of the IT landscape from infrastructure to security, he was appointed global CIO in 2013 and started to look for closer alignment between IT and the business.

Meliá is a Spanish hotel chain founded in 1956. It is Spain's largest domestic operator of holiday resorts and the world's seventeenth biggest hotel chain. A market leader in resort and urban hotels, Meliá covers everything from exclusive luxury holidays to high-quality family vacations. Currently, the company operates 374 hotels in 40 countries on four continents, employing about 40,000 staff.

Responding to the recent pandemic

The coronavirus pandemic was the worst crisis in Meliá's history, leaving the group without any sources of revenue for many months. Christian says the existential threat

of COVID-19 was, in retrospect, a perfect catalyst for new ways of thinking. As a first response to the pandemic, Meliá offered 20% of its rooms to health workers and patients. Many hotels became hospitals and the company's staff volunteered their time to serve local communities.

Christian reflects on the two-year pandemic as "the hardest time but tempered by beautiful things." Business picked up rapidly in the wake of COVID-19 and Meliá is now enjoying record revenues and margins. In particular, the leisure side of the business is booming. Christian suggests the return to profit has been akin to opening a bottle of fine champagne.

Building an agile, post-pandemic business

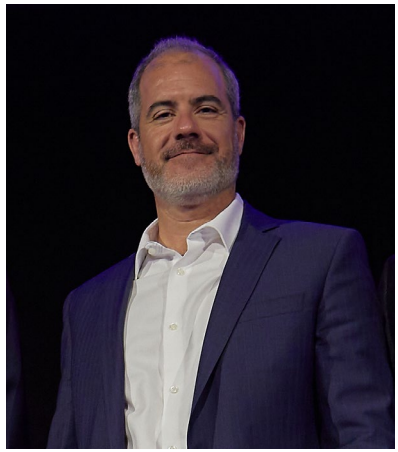
A combination of high demand and inflationary pressure has encouraged the group to seek agile solutions to critical business challenges, such as processing sales and distribution for 100,000 rooms. By moving central reservation systems (CRS) to the cloud, Meliá has reduced distribution costs by 60% and increased its capacity to handle higher levels of demand across its leisure and business segments. The impact is visible: cost savings of €4 million euros and a €50 million increase in revenues.

For hotel groups, CRS is critical to commercial success. Meliá serves a multitude of external channels and partners, such as Booking.com, and it also receives direct business through its own website. All booking requests must flow through the CRS. There was a large amount of debate within the group about whether to build or buy a CRS. Christian decided to use a cloud-based platform.

Developing a versatile reservation system

Meliá was one of the first hotel groups to take reservations via the internet. In 1999, the company embarked on a major programme and redeveloped its CRS, using a fifth-generation software language, mainframe hardware, and Db2 database technology. Over time, this CRS served Meliá well, but Christian recognised the cost per transaction was too high relative to the company's competitors. In addition, it took the company too long to use the CRS to bring new features to market.

In 2017, Christian led the rebuilding of Meliá's reservation system. In just 22 months, his team rewrote the existing fifth-generation codebase and transferred CRS functionality from mainframe hardware to the cloud. This transformation introduced a high degree of agility into the hotel group's operations. First, the shift to the



Christian Palomino has helped Meliá to stay at the cutting edge of innovation by migrating core applications and processes to a cloud-native platform.

Christian Palomino, Global IT Vice President, Meliá Hotels International

Scan code to watch the full interview.

cloud supported a move to data-driven decision-making processes that helped to optimise room occupancy and boost profitability. Second, the transformation allowed the group to deliver personalised experiences for every hotel guest.

Organising the digital kitchen

The move to cloud-native platforms and languages was a fresh challenge for Meliá's 200 IT staff and contractors. Christian had to train his staff to become fluent in Java and microservice techniques. He split his team into two halves: one half focused on developing its application knowledge while the other half concentrated on enhancing its technology expertise, such as in Java. Having started with just two teams, Christian subsequently split these teams several times to cover a range of software capabilities. This approach helped his team to overcome the inertia that can slow big change programmes.

Having completed the move to the cloud, Christian is now focused on enhancing functional capabilities. He's using robotics to tackle manual activities, such as bill processing. He also recognises the power of artificial intelligence to help make sense of the huge volumes of data generated across the group. Christian recognises Meliá must continue to embrace innovation to compete with digital natives.

Defining the qualities of a Master Chef

Christian says the main quality of a successful CIO is understanding the business challenges of their sector. He is part of Meliá's strategic committee that develops policy and oversees investment across the group. He is, therefore, in a strong position to promote techniques that can reduce costs and improve profitability. Christian believes pioneering firms in their sector, such as Meliá, demonstrate constant innovation. He says the key success factor for IT is to work closely with business partners to achieve short bursts of innovation and operational improvements.

At a personal level, Christian emphasises the need to build teams that can take on additional responsibilities. As CIO, he acts as a team coach but offers a high degree of autonomy to staff, so they can grow within their roles. His mantra is that it's always possible to do things better; individuals should stretch themselves constantly.

Christian advises aspiring digital leaders to trust their own instincts: "Be yourselves and listen to your inner strengths." He says transformation is a team sport and no single person is indispensable. Leaders must make everyone in their team feel like a star.

Lufthansa Cargo

Moving air freight efficiently and effectively

Ingredients

- Leading the bespoke development of a cloud-based booking engine
- Using Agile to create a software-driven organisation that develops its own applications
- Implementing a production, planning and steering environment that optimises assets
- Finding innovative ways to empower people across the organisation with data

Preparing the dish

Lufthansa Cargo CIO Jochen Göttelmann studied at the University of Valencia and completed a master's degree in mathematics from Johannes Gutenberg University in Mainz. Jochen started his career as a researcher, developing simulations for global atmospheric dynamics. He then applied his IT knowledge in a business setting. He became a project manager in finance before moving into senior IT leadership positions at Credit Suisse and Allianz.

In 2015, Jochen switched sectors and became CIO at Lufthansa Cargo, which is a company that spans two industries: air travel and logistics. The company manages the transport of physical items around the globe and Jochen says it's a "fascinating environment" to apply technology. Headquartered at Frankfurt Airport, Lufthansa Cargo employs about 4,000 people, serves around 300 stations globally, and is one of the top 10 airlines in the world.

Developing a new booking engine

Until recently, the company relied on a legacy booking engine that was developed in the 1990s. This heritage

platform restricted Lufthansa Cargo's ability to launch new data-led applications quickly and effectively. In a digital age of fast-changing customer requirements, it was clear to the business that a modern platform for change was required.

A strategic plan to move away from the legacy engine was unveiled in 2012. Initial work centred on the modernisation of back-end processes. However, this attempt at standardisation was thwarted by the complexity of business operations. So in 2018, Jochen took a radical decision and led the bespoke development of a cloud-based booking engine.

Built on Microsoft Azure in an Agile environment, this project was the first cloud-native development in the Lufthansa Group. The coronavirus pandemic meant costs and deadlines had to be managed carefully. Despite these challenges, the customer front-end—which allows clients to book via a portal and to use application programming interfaces—was completed in late 2020. The internal front-end—which allows employees to run back-end processes, such as pricing and revenue management—was finished in late 2022.

Jochen's achievement should not be underplayed: his team delivered a new platform, with a new Agile way of working, in the middle of a pandemic. While some people think of a move to on-demand IT as simply a transfer from internal data centres to the cloud, Jochen says the key to delivering value is the platform-as-a-service layer. This layer helps the business make the most of cloud technology—and it's also the most complex element to get right, because of engineering, governance, and security requirements.

Changing the software factory

The Agile programme of work for the shift to the cloud required new skills and capabilities, such as cloud architecture and change management. Scrum masters ensured a high level of discipline in each sprint. Every three weeks, Jochen and his team ran sprint reviews with business stakeholders to ensure goals were reached. They bolstered their capabilities by using internal development resources from Lufthansa Group. Jochen says the next step involves shifting all development work to the in-house team. He wants to create a software-driven organisation that develops its own applications for business use cases.

His 80-strong Agile development department is split into four DevOps teams who work in parallel on front-end and back-

Jochen Göttelmann explains how shifting to a bespoke cloud platform has slashed application development times and boosted operational performance across the business.

Jochen Göttelmann, CIO, Lufthansa Cargo (currently: Lufthansa Airlines)

Scan code to watch the full interview.

end projects. Each team has a dedicated product owner who sets the long-term vision. Jochen says IT security must be managed carefully in a cloud environment. DevOps teams use security by design to ensure data protection is integral to the development process, rather than only being considered after deployment.

The IT department has a five-year roadmap for further product developments. Jochen estimates that moving from a legacy environment is helping Lufthansa Cargo to save €2 million a year. He says the cloud platform will halve application development times, allowing his team to deploy products quickly and effectively: "Moving to the cloud increases velocity and efficiency—it's a boost in operational performance."

Optimising assets

Jochen has also pushed innovation in other areas, including workflow. Timely forecasts are crucial in freight, where bookings are often made just days in advance. Four years ago, Jochen and his senior stakeholders decided to implement a production, planning, and steering (PPS) environment that optimises how planes, warehouses, and human resources are used.

The PPS uses a combination of internal data analytics, Quintiq's planning and scheduling software, and iPS's real-time fulfilment platform. It provides an overview of expected shipment flows, warehouse capacities, and the human resources required to manage physical processes. "It's a feedback loop, where each lesson is used in the next forecast," says Jochen, who says the PPS has produced seven-digit savings and supports effective labour deployment.

Jochen says data becomes ever-more important to Lufthansa Cargo. He's searching for innovative technologies to help empower people across the organisation with data. That process will be the priority for his fast-growing IT team going forwards, which includes 165 professionals. This team currently manages about 45 business applications and will continue to grow due to the focus on in-house software development.

Defining the qualities of a Master Chef

Jochen says every CIO has housekeeping responsibilities; technology systems must be up and reliable. However, successful CIOs have a broader vision and must encourage co-development between the IT department and the

rest of the business. He says great CIOs are advisors and not just implementors.

When it comes to his own team, Jochen fosters trust and responsibility. Decisions are taken by product owners because those professionals hold the expertise. If there's a mountain, Jochen wants to climb it. His role is to set the overall vision for those he leads: "Where do we want to go as a company and how can you make the company work better in the future?"

Jochen advises next-generation leaders to be bold. Have a clear plan for what you want to achieve and to follow it. Most crucially of all, trust yourself.

TÜV SÜD

Embracing digitisation in a highly regulated business

Ingredients

- Using digital to augment and improve inspection and certification processes
- Harmonising the company's 13 SAP systems down to as few instances as possible
- Making tactical use of cloud services and staying open to expansion
- Finding ways to use data to support innovation and new customer experiences

Preparing the dish

Stefan Domsch founded his first software development company during high school. After completing an IT degree at Otto-Friedrich-Universität in Bamberg, Stefan sold his company and worked for seven years at Accenture. After nine years at BMW, he completed management stints with Accenture Strategy and software-engineering firm ERNI. He joined TÜV SÜD as CIO in 2016.

TÜV SÜD is a testing inspection and certification company that was founded more than 150 years ago in Germany. Today, the firm employs 26,000 people across 1,000 locations globally. Its activities range from the testing of products to the inspection of elevators and onto the certification of processes through standards. Stefan manages about 1,000 IT professionals, including 400 internal staff.

Digitising operational activities

TÜV SÜD wants to use digital to augment and improve its inspection and certification process. The company's success depends on the knowledge of its inspectors.

Stefan is searching for ways to use technology to support the work of these specialists. His aim is to help the firm digitise its diverse operational activities.

A common technological backbone is crucial to these innovation efforts. TÜV SÜD is a long-time user of SAP. It uses the platform to manage human resources, finance, and CRM processes. While various global entities use SAP, they don't use a single instance. However, all invoices are processed through SAP and consolidated in a single data warehouse.

Consolidating ERP systems

Stefan is investigating the benefits of a move to cloud-based SAP S4/HANA. He wants to harmonise the company's 13 SAP systems down to as few instances as possible. Whether the organisation ends up with a single instance or more depends on architecture. He recognises it will be tough to avoid customisation because of the diverse nature of the business.

TÜV SÜD's ERP systems are currently hosted in an internal data centre. Stefan says the significant role that information plays in the organisation means data ownership is crucial. With the added issue of cost, it's likely the business will choose to host S4/HANA internally and will assess the benefits of cloud-based ERP in the longer term.

Moving to the cloud

TÜV SÜD makes tactical use of cloud services, such as Microsoft Azure, Salesforce, and SAP SuccessFactors. Stefan believes the cloud is the future of IT but also recognises that any move on-demand brings a higher level of dependency on your provider. That tight bond can create issues when your partner increases their prices.

While staying off the cloud means it's harder to introduce automation or boost optimisation, Stefan's able to maintain data control at a cost that's right for the business. However, he maintains an open strategy: "If there are good arguments for embracing the cloud, then it's important to rethink what you've said before."

Innovating the inspection process

Stefan's team is exploring how inspectors can use digital technology to access information on-site, such as when they're fixing an elevator. His team is evaluating how artificial intelligence might be used to screen paper documents for key information. This screening would mean inspectors spend less time searching documents and more time on their work.

Inspections cost money. Take the example of a chemical plant—stopping production, cleaning storage tanks, and searching for

Stefan Domsch is creating solid technological foundations for the introduction of innovative inspection processes in a cost-conscious and data-sensitive manner.

Stefan Domsch, CIO, TÜV SÜD AG

Scan code to watch the full interview.

signs of corrosion can cost a client millions of Euros. Stefan's team is working on the development of devices that monitor corrosion proactively. In addition, they've created a smart-elevator device that supports predictive maintenance.

Stefan also wants to digitise the customer experience. While inspectors remain at the core of the inspection process, the organisation is looking to introduce self-service tools as part of a broader ecosystem of support mechanisms. However, there are legal obstacles to innovation because the inspectors work in highly regulated environments.

Embracing data

TÜV SÜD must use data with care due to its legal obligations. Stefan gives an example: inspection and consultancy can't take place simultaneously and must be offered as separate services. This operational diversity means that, while TÜV SÜD holds huge amounts of data, it's not held in one place. The company is beginning to consolidate its information and is thinking about how to use data effectively.

Significant progress has been made. Stefan gives the example of a system that automatically scans vehicles for damage. It's been possible to create this system because TÜV SÜD holds thousands of images of damaged cars. Now, the organisation wants more: "We're still a very people-oriented business but we see data playing a bigger role in the future."

Defining the qualities of a Master Chef

TÜV SÜD's global IT organisation is structured into three areas: plan (which covers key areas such as strategy and security); build (which is split into central and divisional requirements and covers the applications for TÜV SÜD's five core business units); and run (which is split into regional operations and data centres).

Stefan's role is to bring together the people who are responsible for plan, build, and run. His vision is to create "One IT". While the IT department spans different legal entities and regions, the purpose of the organisation is to support the business with harmonised and streamlined systems and services, re-using components where possible.

When it comes to leadership style, Stefan wants to enable people and get the best from them. He doesn't want to be continuously asked for approval. In the fast-changing world of IT, it's critical his staff feel comfortable making decisions that produce value.

He advises next-generation leaders to treat people the same way that you want to be treated. If you stay open-minded to change, you can become a great leader.

DB Cargo

Using innovation to boost freight transportation and sustainability

Ingredients

- Using digitalisation to manage rail capacity and reduce the need to lay more track
- Adopting automation to cut manual activities and increase operational efficiency
- Creating "Amazon-like interfaces" to give clients a portal into the movement of cargo

Preparing the dish

Arlene has a master's degree in business administration and computer science from the Berlin University of Applied Sciences. She started her career in IT consulting in 1998 with Siemens and worked in other consulting companies around the world, including in Canada and the Philippines. In 2014, she took an IT leadership role at Volkswagen and joined the Deutsche Bahn CIO office in 2020. A year later, she was appointed CIO and CDO at DB Cargo.

Deutsche Bahn is Germany's biggest state-owned railway company, employing 330,000 people globally. In Germany, its 18 business divisions employ 220,000 individuals. DB Cargo is the biggest rail-freight operator in Europe, employing 30,000 people across 18 countries. The company wants to use digitalisation and automation to help transfer road freight to rail.

Understanding the challenges

Arlene says DB Cargo has two key challenges. The first is capacity management. The company shares Germany's 30,000-kilometre rail network with passenger trains. Her team uses digitalisation to manage capacity and reduce the need to lay more tracks.

The second big challenge is staffing. Arlene says DB Cargo's IT department is not well known across Germany and she wants to change this perception by using automation to reduce manual activities, which will create more room for exciting technology projects that attract fresh talent to the business.

An overarching business aim is sustainability. DB Cargo saves seven million tons of carbon emissions every year. While rail freight saves 80% more carbon emissions annually than road transport, rail only accounts for 18% of freight transportation in Germany. Arlene wants to use innovation to push more freight transport to rail and boost sustainability.

Executing innovation

Arlene is a big fan of IT and business fusion. She says the role of IT is twofold: to be a driver of innovation and to show how emerging technology can improve the business.

She's developed a new department called Innovation and Transformation that includes a team that's responsible for developing partner ecosystems. One of Arlene's key principles is that IT shouldn't reinvent the wheel. Good practices already exist in the company's partners but also in its competitors. As a fan of co-creation, Arlene charges her team to speak with customers and find innovative solutions to business challenges.

DB Cargo wants to become a data-driven company, so Arlene runs a data intelligence and analytics team that scans the business and looks for opportunities. She uses a "portfolio mix," where the budget is not just allocated to cost-reduction projects but also innovation.

Supporting co-creation

Arlene's team has created a data lake that brings enterprise information into a single location. They have also implemented cloud-based Salesforce technology that provides an integrated platform for improving business processes and customer services. The company maintains a platform-based cloud strategy and is a heavy user of AWS technology.

Co-creation spans the organisation. A team at the control tower in Duisburg has developed a platform that allows clients to book freight transport. The team also developed a customer service centre, where clients can come in and discuss their requirements. This process led to the co-creation of an award-winning system that uses advanced camera technology to automatically identify valuable scrap metal in cargo.

Arlene Buehler explains how she's bringing IT and the rest of the business together to co-create novel technological solutions to disparate organisational challenges.

Arlene Buehler, CIO and CDO, DB Cargo

Scan code to watch the full interview.

Arlene wants to create user-friendly "Amazon-like interfaces" that give clients a portal into the movement of their cargo. Co-creation extends to the operations team and involves a rapid development process where ideas are discussed and digital transformation programmes are delivered that create benefits for everyone.

Introducing emerging technologies

The next stage of automation at DB Cargo will involve artificial intelligence. Arlene's team has already implemented nine camera bridges in the company's train yards to ensure wagons are coupled correctly. These cameras produce millions of images that scan wagons for damage. Maintenance specialists are alerted and check wagons in the yard.

DB Cargo is also investigating how the Internet of Things can help manage the 3,600 trains it runs daily. The company is exploring how sensors inside wagons can collect data and ensure cargo is transported smoothly and safely. The sensors can also check for temperature, which is crucial to transporting food effectively.

Deutsche Bahn has established a group-level AI factory to share best practices. Different divisions bring use cases and discuss solutions that already exist within the group. She believes generative AI technologies such as ChatGPT could boost language translation, which plays a fundamental role in DB Cargo's cross-border operations.

Modernising the IT kitchen

Arlene says DB Cargo is at the beginning of its journey towards low-code technologies and robotic process automation. Her team is focused on modernising its legacy estate, such as a 30-year-old production system that brings train information together.

The IT team draws on 1,000 internal and external experts, including resources from DB Systel, which is the digital partner of Deutsche Bahn. Arlene's operating model relies on a community approach, where 18 country-based technology teams share new ideas. She meets IT managers regularly to discuss challenges and opportunities.

Defining the qualities of a Master Chef

Arlene describes her joint CIO and CDO position as "a very exciting role" that allows her to use innovation to boost business processes.

She is a big fan of collaboration. Across her career, she's worked in various countries and encountered multiple cultures. She uses

these experiences to bring people together across a multinational business. She's a strong communicator who creates a common language.

Arlene's personal mantra is "seize the day." She believes trying and failing is better than maintaining the status quo. With 23 direct reports, she believes it's crucial to foster talent and allow people to thrive. She's also eager to encourage more women to join and excel in IT. She advises next-generation leaders to "just do it" and grab every opportunity.

Nonna Fangitta's tuna

Serves 4

Ingredients:

- 400g fresh tuna fillet
- 1kg ripe tomatoes
- 3 garlic cloves
- 1 red chilli
- fresh rosemary, 2 sprigs
- Olive oil
- 4 anchovy fillets
- A small handful of capers
- 1 heaped teaspoon dried oregano
- 1 cinnamon stick
- 2 x 400g cans of good-quality tomatoes
- 320–480g spaghetti, preferably whole wheat
- ½ bunch of basil
- Sea salt and freshly ground black pepper, to taste

This favourite dish of Jochen Göttelmann has been adapted from *Jamie's Italy* by Jamie Oliver. Published November 14, 2006 by Hachette Books

Directions:

1. Boil some water in a kettle and blanch the ripe tomatoes for around 40 seconds. Drain them and cool them in a bowl of cold water. Peel the tomatoes, remove seeds and cores, and roughly chop the flesh.
2. Chop garlic and chilli in 20 mm slices (or thicker if you like).
3. Make sure that your tuna is fresh and clean. Place it on a big plate or chopping board and make 8 angled incisions. Stuff one slice of garlic, chilli, and a pinch of rosemary leaves into each incision.
4. Get your hands on the tomato sauce. Choose a big pot or casserole—it needs to be big enough for the tuna to be completely submerged. Put the pot to medium heat and add a drizzle of olive oil with the remaining garlic. Once the garlic starts to get golden, add the remaining chilli, rosemary leaves, anchovy, and cinnamon stick. Fry until they turn lightly golden. Add the fresh and canned tomatoes, breaking them apart with a wooden spoon. Bring to a boil, then reduce to a gentle simmer and cook for 10 minutes. Season the sauce with salt and pepper, add dried oregano, and rinsed capers.
5. Finally, poach tuna. Carefully place the tuna fillet into the pot, ensuring it's completely covered with the sauce. Partially cover with a lid and simmer gently for around 15 minutes for a thin tuna fillet and up to 25 minutes for a thicker one until it flakes apart.
6. Remove from heat, discard the cinnamon stick, and adjust seasoning if needed.
7. While tuna is poaching, cook wholewheat spaghetti in a large pot of salted boiling water following the packet instructions.
8. Before assembling, gently flake the poached tuna. Drain the spaghetti and toss it with the flaked tuna and tomato sauce in the hot pot.
9. Make sure you put a generous amount of tuna and sauce on each plate. Add some freshly torn basil on top and serve your delectable meal dish accompanied by a glass of good red wine.
10. Any leftovers can be enjoyed on toasted bruschetta with a fried egg on top for a delicious second meal.

PLAYBOOK 3

DATA SOVEREIGNTY: TAKING BACK CONTROL

Our digital footprint is now as precious as our physical identity and integrity. This high value is as true for us as individuals as it is for companies or even countries. Data and digital flows are the foundations of societies and the primary source of value in the digital economy.

However, the importance of this data also brings inherent risk. A handful of mega-powerful Big Tech companies have extracted, monopolised, and monetised our data during the past two decades. More than 90% of data connected to Western individuals and organisations is hosted in the US. Geopolitical actors increasingly use digital technology and data as tools of power. Legal initiatives, such as the US CLOUD Act and the Chinese National Intelligence Law, give foreign powers unlimited access to our data.

European organisations and governments are responding to this power grab and re-evaluating their external exposure. They are launching digital sovereignty-related initiatives to maintain or acquire physical and digital control over strategic assets, including data, algorithms, and critical hardware and software.

With this context in mind, let's consider both the challenges that CIOs face and the practical steps they can take to protect and then exploit their data assets.

Big data keeps getting bigger

Analysts anticipate there will be up to a trillion connected machines and devices in use globally within the coming decade. WhatsApp users, meanwhile, send 40 million messages every minute. This data-generation process continues to intensify. Estimates suggest the volume of stored data globally could multiply by a factor of 23 times this decade.

The bad news is that most organisations have not been as successful as they had hoped in exploiting these data resources. Big data has been an important management topic for more than a decade, but its potential is yet to be fully realised. Analysts estimate that up to 80% of large data programmes fail to meet their return-on-investment targets.

Data is often referred to as the 'new oil,' yet it has little value unless it is refined to provide practical insights that help businesses improve their performance. A great deal of effort has been directed towards assembling data into formal structures, such as data lakes. Far less effort has

been focused on the specific elements that are required to provide clear business outcomes from the collection of data.

Large data programmes often lack a clarity of purpose. The key challenge facing digital leaders is how to integrate data sources into workflows and applications. Managers must start mapping insights and outcomes to specific data sets if they want to generate successful results from big data programmes.

Hope comes via technological innovation. We are reaching an inflection point where high-quality tools that can tackle data issues are becoming widely available. The rapid growth in the use of generative artificial intelligence (AI) tools during the past year is illustrative of a new level of access to data-led technologies. At the same time, the continuing shift to the cloud enables vast amounts of data to be stored and processed.

Increased use of AI means there will be an explosion in data volumes during the next few years. However, storing this data requires an inordinate amount of power. We must collect and analyse data more intelligently to help avoid a data storage and sustainability crisis. Blockchain and AI could allow us to control data volumes more effectively, but this automation will have consequences for employment.

Changing mindsets and exchanging insights

Technological innovation can help us to manage our data more effectively, yet it is only part of the story. There are significant cultural barriers to overcome. Employees can be unwilling to change how they operate, especially within large, mature organisations. Our research suggests there is often a "missing ingredient," where people suffer from a lack of imagination about how data can transform the business for the better.

The upshot of this cultural barrier is that changing mindsets is often far harder than upgrading technologies. CIOs must engage with their executive peers to close the gap between technological innovations and cultural norms. There are two main priorities for IT executives.

- Link discussions on data to specific outcomes, such as using insight to solve business problems. Focusing on this priority allows digital leaders to clarify what types of data are mission-critical and what tools will yield business value from data.
- Promote the practice of 'imagineering,' which encourages people to step out of their current environments and use data to identify new opportunities, such as product developments, or improvements to customer journeys and back-office workflows.

Something to bear in mind is that the young, modern workforce has grown up using technology, unlike many executives, who were often brought up in a pre-digital native era. We must learn to accept that different generations have varying levels of digital skills. Senior managers must work with digital natives to combine their knowledge and experiences. Reverse-mentoring techniques can encourage inter-generational skills exchange.

Innovation in all its forms will also be crucial for CIOs looking to help the businesses make the most of its data. Our organisations must create safe spaces for staff to experiment and learn digital techniques. This space can be used to encourage innovation and create a learning culture that is conducive to our new data-rich environment.

What's clear is that the data obstacles our businesses face are complex, but they don't have to be unsurmountable. Conversations with our CIO community suggest there are practical steps we can take to manage our ever-increasing but commercially valuable data resources:

- Data management is a process that includes the collection, curation, and contextualisation of information. There are no shortcuts.
- Businesses need an effective infrastructure for data storage and processing. Modern cloud platforms provide the capacity and tooling to address this challenge.
- Emerging developments, such as edge computing, can help to solve the data-overload problem.
- The democratisation of data is the best way to engage people within an organisation and to overcome cultural barriers.

Conclusion: Getting to grips with data

Our CIO community recognises data management is in its infancy, although new techniques are emerging rapidly. As the amount of data we produce continues to grow, we believe CIOs should focus on the following areas as they build their data management strategies:

- Data is not valuable on its own. It needs to be refined. The comparison of data with oil is a meaningful one.
- Managers should start with specific business issues and then think about the data that is required to solve these challenges. The desired outcome is the best place to start.
- The most valuable element of data is the insight that it can deliver to humans. Experienced managers need to acquire data skills to generate insight.
- Intergenerational differences exist between employees in today's workforce. These differences need to be addressed if we are to move forwards successfully.

SECTION 3

REINVENTING THE DIGITAL KITCHEN

"IT has evolved over decades to become too complex and too rigid to respond to developments in today's marketplace. IT leaders must seek simplicity at scale to enable organisational agility."


Goldstein

Many recipes in this edition of the CIONET Cookbook include IT transformation stories. Master Chefs are examining the operational processes of the Digital Kitchen, the name we give to the collection of internal and external skills and tools that deliver IT products and services. This examination allows them to identify changes supporting business innovation and process automation.

The answer for many Master Chefs is a radical reinvention of the tools, platforms, and supply relationships that have evolved gradually over many decades. In this section, we turn to this process of reinvention, which we suggest is the final gear that digital leaders must keep spinning. As a recap, we suggest in our Introduction to this year's CIONET Cookbook that the trilemma of challenges around the customer, business, and technology are three gears revolving at different speeds. In this first section, we focus on technology and suggest that traditional structures and formats will not satisfy customers' sophisticated tastes in a fast-moving marketplace. Moreover, old-style IT Kitchens will be unable to respond to business changes.

The contemporary Digital Kitchen is the product of a multi-staged evolution in IT. The era of distributed processing in the 1980s and 1990s gave every part of an organisation the freedom to choose its hardware and software. However, this fragmentation in IT did not suit the structural changes in business towards the end of the 1990s. The preponderance of global manufacturing processes and services led to demands for integrated IT platforms. Introducing large-scale ERP systems from providers such as SAP and Oracle provided a better solution to the need for integration. The introduction of these systems encouraged organisations to standardise hardware and software, creating a centralised mentality that persists today.

However, these standardised solutions were based on monolithic architectures and on-premises hardware that was costly to install and inflexible to change. As public cloud provision became a viable alternative at the start of the last decade, many CIOs saw the shortcomings of their in-house systems and opted for a range of on-demand services. And, with the rapid proliferation of Software as a Service (SaaS) and Platform as a Service (PaaS) provision, CIOs recognised the shortcomings of a free-market approach to applications and platforms. Now, radical action is required to rectify past ills.

Two distinct themes stand out from the recipes of the five Master Chefs in this section who are determined to create a modern Digital Kitchen. The first theme is the integration of IT operations, including staff, applications, and infrastructure, to deliver greater operational efficiencies. The second theme is modernising core systems to enable organisations to better serve their customers in an increasingly online world.

When it comes to the first theme of IT integration, this sub-section demonstrates how Master Chefs in insurance, central government and retail are applying radical methods to consolidate applications and infrastructures. Axel Schell, chief technology and transformation officer at Allianz Technology, describes his approach as achieving "simplicity at scale". IT integration includes rationalising supply relationships, reducing heritage applications and adopting hybrid public-private platforms. These techniques can generate substantial savings that can be used to modernise core systems. Incremental changes will not be enough. CIOs should aim to fundamentally transform performance with stretched targets that deliver as much as a 50% cut in costs or a 50% boost in performance.

The second theme of system modernisation highlights how Master Chefs are undertaking a radical rethink of IT and enterprise architectures to create alignment with digital business models. Master Chefs from banking and

telecommunications oversee multi-year programmes to transform legacy core systems into integrated, data-led architectures. Cloud-first strategies and BizDevOps development methods underpin these transformations.

The key challenge across both themes in this section is the amount of money and time required to support a transition to integrated digital platforms. A selective approach to modernisation that aligns with product and service innovations can help to reduce risk and produce a return on investment. However, the overall message is clear: Master Chefs must convince their peers that only a radical approach can prepare their organisations for a successful digital future. There is no time to lose.

FIVE
MODERNISING CORE SYSTEMS

The second theme in this IT transformation section is the modernisation of core systems to enable organisations to improve customer services in an increasingly online world. Many banking, retail, telecommunications, and government organisations still depend on core systems developed in Cobol 30 or 40 years ago. Large manufacturers adopted full-scale ERP systems, such as Oracle and SAP, in the 1990s to help consolidate global manufacturing and logistics platforms. These systems also remain in place today.

In our previously published report, Escaping Legacy,[1] we observed that leading government and financial services organisations surrounded their legacy core systems with cloud-based, software-as-a-service products, including Workday and Salesforce. These platforms allowed organisations to reduce the complexity of the core by taking advantage of modern software. However, this shift has proven to be a stopgap solution with limited returns. Vital data assets, such as customer records, remain hidden deep in legacy environments.

The key challenge for Master Chefs is how to approach core modernisation in a cost-effective and timely fashion. In our discussions with Master Chefs, we discovered that core system modernisation has become feasible, especially when CIOs look to avoid a 'big bang' approach.

Sławomir Soszyński, CIO of ING Bank Śląski in Poland, is undertaking a multi-year programme to introduce a next-generation core banking system. As a board member, Sławomir recognises this ambitious move will transform how the bank provides services to its customers. The new system is already simplifying loan and mortgage applications. The transformation of the core banking system has been underpinned by adopting a cloud-first strategy and BizDevOps development methods.

Until recently, Geert Goethals was CIO at Belgian telecommunications company Proximus. He managed a five-year transformation programme that brought together ICT, mobile, and fixed operations as part of an integrated data-led architecture. At the outset of this

1 Roger Camrass and Andy Nelson, "Escaping Legacy: Removing a major roadblock to a digital future," Roger Camrass (Guildford, Surrey: The University of Surrey, May 29, 2019), https://www.rogercamrass.com/_files/ugd/abce80_641b9735056d4174b009eec0892c2967.pdf.

initiative, he recognised that he would have to avoid a monolithic approach with all its inherent risks. Instead, he followed a step-by-step process, which mapped the journey into coherent elements that complied with a target IT operating model. Adopting an Agile methodology has fostered collaboration and purpose across stakeholders.

Over the next five years, we expect more organisations to modernise their core systems to align with rapidly changing market conditions. The complete digital transformation of a business will depend on the success of these programmes. One significant issue for CIOs will be how they convince their boards to proceed with these initiatives, given the capital cost and potential risk to business operations. However, CIOs must succeed in their attempts to modernise core systems. Modern development methods combined with cloud platforms offer the potential for new levels of service provision.

ING Bank Śląski

Using Agile and cloud to deliver personalised banking services

Ingredients

- Running a large-scale digital transformation programme that uses Agile techniques
- Integrating customer-focused services delivered as containers in an iterative manner
- Adopting a cloud-first strategy to run as many applications as possible on-demand

Preparing the dish

Sławomir Soszyński started his career in Linux administration and software development. He moved into technology management with Citi and then held senior positions in London, New York, and Singapore. After moving back to Poland to run the global shared services organisation for JP Morgan, he became CIO and board member at ING Bank Śląski in September 2019.

ING Group is a Dutch multinational financial services firm headquartered in Amsterdam. ING Bank Śląski is part of this group, and Sławomir's IT function supports retail, SMB, and enterprise-level banking. The bank has had to deal with "black swan" challenges during the past two years, including the coronavirus pandemic and Russia's invasion of Ukraine. Digitalisation plays a key role in helping ING deal with these challenges.

Transforming the bank

Sławomir is running the Next-Gen Core Banking Programme at ING Bank Śląski, a digital transformation initiative involving a full re-architecture of the bank. The transformation, which is the biggest in the bank's history, will embrace Agile, boost system availability and offer

new levels of personalisation to customers.

The first step of the transformation strategy, which began at the end of 2021, was to choose a core banking system based on the smart contract concept. This concept allows the bank to integrate services delivered as containers in an iterative manner.

His team has started to migrate the firm's technology products to the new, cloud-based banking system. The system is run from an internal data centre, but the long-term plan is to move to the public cloud. The aim is to complete the digital transformation programme by the end of 2025.

Delivering results in an Agile manner

Sławomir's team has to keep older banking systems running while introducing the new banking platform. The bank has a close relationship with its technology provider, who helps ensure the transformation is completed on time.

The first product to be delivered allowed customers to apply for loans in a simplified manner. There is full integration between the front-end, middleware, and back-end systems. Sławomir then turned his attention to mortgage applications and savings accounts.

Digital transformation is run via BizDevOps, where tribes manage programme elements. A specific tribe runs large projects. Smaller projects are led by a collective of tribes. Sławomir says there is close integration between business and technology. He wants developers to see customers' "happy faces" as the projects succeed.

Embracing the cloud

Sławomir has introduced a cloud-first strategy at ING Bank Śląski. Every new technology investment is assessed on its potential for running in the public cloud. The aim is to find new, cloud-based solutions when legacy applications can't be moved from the internal data centre.

He says any transition must be undertaken in a cloud-native manner, which means using open standards that make it easy to move workloads between providers. The bank also prioritises risk and security. Cloud services are compliant with governance mechanisms around the globe, particularly given the geopolitical situation in Europe.

Sławomir says moving applications to the cloud is far from straightforward. He says the team's factory, which includes the frameworks and processes for moving workloads to the cloud, is now in place, so the pace of transition will quicken.

Sławomir Soszyński says his finance firm is eager to move away from the monolithic systems that hold many banks back and to embrace digital technologies.

Sławomir Soszyński, CIO and Board Member, ING Bank Śląski

Scan code to watch the full interview.

Organising the IT kitchen

ING Bank Śląski is Poland's biggest bank with 1,200 IT professionals. Sławomir's IT operating model has two principles: technology talent is aligned to individual lines of business; key IT functions are centralised and run across the lines of business.

A centre of excellence creates rules and regulations for the bank's technology services, such as developing standards for enterprise architecture. Learning and development are also centralised and help ensure IT professionals across the bank have the right skills.

Describing great digital leadership

Sławomir's joint role as CIO and board member means he wears two hats. As a board member, he co-leads the bank with his management colleagues and helps set strategy. As a CIO, he maintains existing technologies and delivers new capabilities.

He believes CIOs have done a great job of explaining the transformative power of digital and data to the rest of the organisation, building the right culture and developing people. These achievements mean CIOs are increasingly rising to board-level positions.

In the future, Sławomir believes CIOs will be less technology-focused and more closely wedded to the rest of the business. While CIOs should have the skills to become CEOs, the transition from IT to business leadership remains rare. He says CIOs who want to become CEOs must convince regulators that they are ready for the role.

Defining the Qualities of a Master Chef

Sławomir says his role is to set the values and expected behaviours for his team and to ensure that those values and behaviours make sense to the people who follow them. He wants to help his managers become leaders by trying, failing, and learning.

His own leadership style is defined by taking calculated risks. He gives his team members space to try different things and have new career opportunities. His role is to ensure the bank has the best technology, which can be challenging because of the speed of change and IT labour market shortages.

Sławomir advises next-generation leaders to never give up on their core values—you must look in the mirror daily and recognise yourself. Also, don't be afraid to try new things. For those who embrace risks, the rewards are there.

Geert Goethals

Simplifying the complicated through collective intelligence

Ingredients

- Crystallising where you're heading
- Using collective intelligence to fill in the how
- Slicing the elephant
- Creating confidence through short-term results

Preparing the dish

Geert Goethals has become an independent advisor after holding several technology leadership positions. After completing a master's in electronic engineering and IT at Ghent University, Geert joined Proximus as a network engineer in 1994. As the industry has evolved, so has his career. He's been around for almost 30 years in a range of roles, latterly as CIO/CTO of Belgacom International Carrier Services and CIO of Proximus. He left Proximus in spring 2023 to become an independent advisor.

Untangling the Gordian knot of legacy

Geert has spent the past few years enacting a digital strategy, recognising several elements of IT would need to be changed. That process involved bringing together various historical areas of the organisation. Several areas relied on an IT stack that had evolved incrementally over time. This complex IT landscape did not provide a suitable architecture for data-led change, so modernisation was essential.

Costly and high-risk monolithic projects were to be avoided by all means. A step-by-step and Agile approach was developed to deliver results quickly, consistently, and cost-effectively. As a first step, the target architecture was crystallised that would allow

The independent advisor and former CIO says structural IT simplification and transformation can be achieved with gradual benefit realisation and contained risk.

Geert Goethals

Scan code to watch the full interview.

it to deliver innovative products and services. Step two involved mapping a journey from the current IT landscape to a dream environment. Step three established the areas of work that would produce the right results.

Reaping the rewards

Geert says the benefits follow a Pareto-type logic whereby a significant part of the potential was reached by addressing about 40 of the IT landscape's 170 capabilities. This work included moving away from legacy platforms and especially reducing system duplication. As an example, a single and automated product catalogue was implemented and an integrated view of customer interactions created through a single cloud platform.

By taking a modular rather than a monolithic approach, Geert's team managed each initiative independently. After two years of a five-year programme, significant progress could be observed. Older applications were phased out and systems consolidated into a single IT environment. Cost benefits were being tracked carefully. As much as 70% of efficiency ambitions were reached after two years. The modern IT landscape provides an Agile platform for quick and high-quality product delivery.

Turning Agile transformation into a team sport

Other CIOs might see integration between IT and business as a second step in an Agile transformation journey, but Geert strived for deep integration from the start. He built fully integrated teams that maximised the number of people who work in an Agile way. He implemented an operating model, where teams worked in Agile tribes and squads to complete work. Each tribe included people who understand customers' demands and specialists who delivered digital technologies.

The Agile transformation process focused on clear business objectives but also crucial employee engagement. Geert felt the deployment of Agile across the organisation fostered a spirit of collaboration. More innovative ideas came from the teams, and he was impressed with their imagination.

Geert says successful Agile transformation involves a range of considerations. Think about the IT environment. CIOs can change, update and clean the architecture, but it should remain consistent. Digital leaders must consider security and the quality and effectiveness of services. In addition, they should develop people and think about how expertise is deployed. CIOs should add what Geert refers to as

"enabling tribes" into each model of work. These tribes work across the organisation and offer Agile services to several initiatives according to business priorities.

Leading and developing people

IT leaders of the past had to keep up with massive demand. They spent a lot of time explaining why things weren't possible. Today, Geert says CIOs have a new role. They must stimulate experimentation and promote all-things digital. CIOs must shape an IT organisation that is able to deliver solutions to the business' challenges, but which is also capable of bringing fresh, innovative ideas to the table.

He says leaders must be clear on vision and priorities, but they should also provide freedom around how their teams deliver results. They should ensure their diverse teams have a broad range of competencies and can work with psychological safety, so their people are comfortable experimenting through an Agile way of working. CIOs must offer exciting initiatives and inspiring journeys to attract people and keep them keen.

Defining the qualities of a Master Chef

Geert says passion and energy are crucial. He describes himself as an enthusiast and enjoys working with his team to turn ideas into actions. Rather than seeing obstacles as blockers, he thinks in a non-linear way and explores alternative routes to success. It's easy to be dragged in new directions, especially during moments of crisis. He tries to stay composed and to keep his energy focused on long-term targets. A good sense of humour is always important.

His advice to next-generation leaders is to focus on your passions rather than just the things you're good at. Pursue your aspirations and don't be overwhelmed by uncertainty or the expectations of other people. Don't give up too easily—keep thinking, keep evaluating, keep trying, and keep going: "Be confident that there is a solution to every problem."

Parmigiano di melanzane Artie Debidien's way

The easiest way and gorgeous on a pretty plate, you'll impress everyone with this smart version of the traditional dish.

Ingredients:

- 2 aubergines
- 4 tablespoons of olive oil
- 500 ml passata di pomodoro
- 12 large leaves of basil
- A few cloves of garlic
- 200 grams of cheese of your choice (mozzarella, Parmigiano Reggiano)
- Extra virgin olive oil to taste
- Salt and pepper to taste

Artie Debidien's favourite dish.

Serves 2 as a main dish, 4 as a starter

Directions:

4. Start by cutting thin slices of aubergines in the lengths and setting your oven to 180 degrees Celsius.
5. Sprinkle some salt to get rid of the water in the aubergines.
6. Brush the already salted slices of aubergines with olive oil and put them on an oven tray. Bake for 20–25 minutes at 180 degrees Celsius until soft and tender.
7. Take them out of the oven and let them cool down a bit—you need to be able to touch them without burning yourself.
8. Layer each individual slice with basil leaves and cheese of your choice—mozzarella is a great choice here, but any other cheese that melts well will work.
9. Role the packed slice of aubergine up.
10. Heat some olive oil with finely chopped garlic in a Dutch oven or casserole. Once the garlic is golden (but not burnt!), add your passata di pomodoro. Season with salt and pepper, cover, and simmer for 15 minutes.
11. Taste your mixture put all the aubergine slices in the bath of passata and cover each roll with some passata as well. Cover again and simmer for a few minutes.
12. Finally, sprinkle some extra cheese—mature Parmigiano Reggiano will be best here, but Grana Padano is also a decent option. Put basil leaves on top of cheese and again leave to simmer until melted and fragrant.
13. Serve on a pretty presentation dish together or on an individual plate. Drizzle extra virgin olive oil, a bit of freshly ground black pepper and/or balsamico over it.

Variation tip: if you want to make it more substantial, you can also put slices of mushroom or chicken in the rolls.

SIX
INTEGRATING IT OPERATIONS

Let's turn first to the integration of IT operations. Most established IT organisations evolved with multiple physical infrastructures, legacy applications, and vendor relationships. These systems, services, and partnerships are costly to support and difficult to adjust as market conditions change at an accelerating pace. The most pressing problem is the accessibility of valuable data assets hidden deep within these complex structures. Master Chefs are tasked with simplifying and modernising their IT landscapes to align with changes at the front end of their organisations.

New methods and tools assist in IT integration. The public cloud provides a flexible platform for infrastructure integration and application modernisation. Software-defined networks help eliminate rigid physical assets to provide operational flexibility. Agile development tools like DevSecOps enable IT and business partners to collaborate on application modernisation.

By upgrading hardware and software components, Master Chefs can extract and consolidate data into central resource pools. Allianz Technology, the John Lewis Partnership, and the Dutch Central Government have instituted organisation and platform integration programmes to streamline IT resources and provide all parties with a common data source.

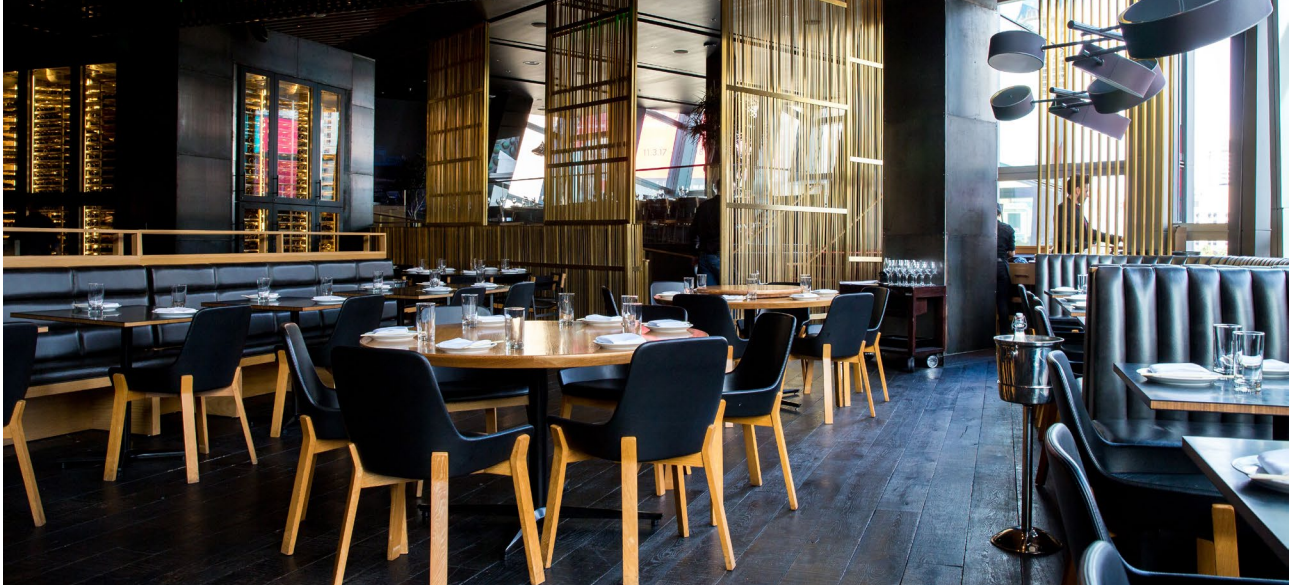
Axel Schell, chief technology and transformation officer at Allianz Technology in Germany, has helped his group respond to customer demands for a one-click experience across digital channels and deal with the onslaught of disruptive insurance tech competition. By adopting the "simplicity at scale" philosophy, Axel has culled 80% of heritage applications and moved the group onto a multi-cloud platform. Over 15,000 IT staff have been arranged into tribes, squads, and mobs to help business partners modernise product offerings and introduce straight-through process automation.

Alex Bowles, head of infrastructure and service management at the John Lewis Partnership in the UK, has transformed his IT estate to help Waitrose and John Lewis stores achieve economies of scale and rapid service innovations. Having conducted a root-and-branch review of IT arrangements across the partnership, Alex opted for an integrated approach to computing and networks involving a single outsourcing partner and a unified IT organisation. He has automated

the delivery pipeline to speed up product innovation and re-platformed heritage applications onto the public cloud. Overall, Alex has cut IT costs by almost a third.

Lourens Visser, CIO of the Dutch Central Government, describes how he is leading an IT transformation programme in response to a political crisis in the Netherlands. One of the critical issues identified during this initiative is a need for more information to inform decisions. Laurens describes a strategy that advocates a unified and sustainable IT landscape across government, emphasising shared services, hybrid cloud platforms, and a coherent vendor ecosystem. This approach encourages transparency of communications across departments and a convergence of applications. This large-scale transformation has enabled the ministries of the Dutch Government to access a single source of data that places the citizen "front and centre" in all their decisions.

Organisations recognise that IT integration provides the foundations for long-term success. However, the challenge for Master Chefs is to demonstrate a compelling return on investment given the scale and duration of these significant integration programmes.



Allianz Technology

Supporting structural business change

Ingredients

- Simplifying business structures and product portfolios to deliver speed and efficiency
- Adopting an integrated IT platform and agile methods to support business change
- Exploiting scale advantage by simplifying IT solutions across the group
- Flattening organisational hierarchies to encourage enterprise and collaboration

Preparing the dish

Axel Schell is the chief information and transformation officer (CITO) of Allianz Technology. He has a master's degree in business administration and a PhD in information systems and financial engineering. He joined Allianz in 2002 and climbed the career ladder to become CTO of Germany in 2018. In 2021, he was appointed CITO of the newly formed Allianz Technology business unit, which provides IT services to the Allianz Group.

Founded in 1890, Allianz is a European multinational financial services company headquartered in Munich, Germany. Its core businesses are insurance and asset management. Allianz is one of the world's largest financial services groups. It employs 130,000 staff and serves more than 80 million customers globally.

Aligning the IT structure with the business

Allianz is a complex business that has grown through a series of acquisitions and a focus on national markets. The board recognised in 2020 there was a need for structural change due to three main factors: growth in digital channels, especially during the coronavirus pandemic; increased

expectations from customers for an 'Amazon-like experience; and the entry of disruptive Insurtech competitors into its traditional personal and industrial markets.

Businesses across the Allianz group have met these challenges head-on. They have sought to both reduce the size of their product portfolios and increase levels of automation, with the aim of boosting the quality of sales processes and customer experiences. Allianz Technology was established in 2021 to support this work through the adoption of a single structure for IT across the group. The resulting business unit exploits scale while simplifying execution.

Decommissioning applications

Axel says the integrated approach to IT delivery at Allianz Technology allows him to support the business through a "simplicity at scale" strategy. This strategy has two strands. The first is to build a single IT platform that accommodates most applications. The second is to decommission up to 80% of heritage applications, many of which overlap in function and purpose. Axel describes the decommissioning of applications as "reducing the IT function's Body Mass Index".

His starting point for this work was the German organisation, where application duplication had increased the cost base. He launched a €700 million campaign to reduce applications by 80%. This approach is now being extended across international operations. Axel has already reduced applications by 50% globally. With fewer applications and higher levels of automation, the number of incidents that IT must respond to has declined by up to 65%.

Implementing a cloud-first strategy

The adoption of a multi-cloud platform is the bedrock that has allowed Axel to provide common applications across the group. He has chosen to use Azure and AWS as strategic cloud partners, suggesting that each provider offers complementary features. He has also promoted the use of Agile development practices and tools. The approach that Axel has taken means that what used to be a 12-month application development process can now be completed in just two months.

Going to the cloud is not necessarily cheaper than on-premises provision. However, Axel believes the cloud is more secure and flexible, and it is popular with development staff. Implementing the cloud has also made it possible to construct a shared data lake across applications and business units.

Adopting fresh techniques

Axel promotes automation in the design of new products and 95%

Axel Schell explains how his integrated technology organisation of 15,000 staff is helping to ensure the business has the IT foundations it needs to overcome some complex challenges.

Axel Schell, CITO, Allianz Technology

Scan code to watch the full interview.

are created with straight-through processing. Despite all efforts to standardise platforms, national regulations and market conditions mean there is a 10% variation in applications across borders. Axel has introduced self-service techniques to help local business units respond to specific conditions.

Axel is a strong advocate of data-driven decision making. He has developed dashboards to monitor every application across the group and identify performance issues. Artificial intelligence is being used to spot and moderate alerts, saving valuable time and effort.

Reorganising the digital kitchen

Axel has 15,000 staff spread across the group centre and the company's individual business units. He encourages his staff to work closely with lines of business and has introduced tribes, squads, and 'mobs,' which are small, agile units that contain both IT and business staff. He likes the metaphor of the 'two-pizza team' that was originally coined by Google.

Allianz Technology has a formal business structure with a CEO, COO, and CITO. The style of the new organisation is flat rather than hierarchical. Axel references the evolution of a 'hippo' structure to one populated by 'geeks.' He employs global product owners to ensure the applications his team introduces conform with the requirements of the business.

Defining the qualities of a Master Chef

Axel thinks of himself as an entrepreneur who is close to both staff and business customers. He is a coding enthusiast and understands the technical aspects of IT. He leads by example, as demonstrated by his initiative to monitor applications at all levels. Such is his love for technology that he has coded a coffee machine to fine-tune its formulations in his spare time.

During 20 years as a CIO, Axel has seen fundamental changes in the role of digital leaders. In the early days, IT would report to the finance chief and be considered a cost centre. More recently, IT has elevated its reporting line to the operating chief and is focused on generating value. He says CIOs should occupy a board position and be able to help shape the business.

Axel advises aspiring digital leaders to connect with experienced practitioners, to exploit their wisdom and to always be curious. He believes successful business leaders listen closely to customers at all levels and adjust their approach constantly to external circumstances.

John Lewis Partnership

Enabling an iconic retailer to compete with digital natives

Ingredients

- Integrating online platforms across John Lewis stores and Waitrose supermarkets
- Reviewing sourcing arrangements to consolidate around a single outsourcing vendor
- Adopting an agile, DevSecOps environment to support the move to a cloud platform

Preparing the dish

After graduating from the University of Exeter with a political theory and philosophy degree, Alex Bowles joined Marks & Spencer as a helpdesk analyst and rose rapidly to manage major incidents across the entire IT platform. Having helped re-platform Marks & Spencer's website from Amazon's AWS to a neutral public cloud platform, he joined John Lewis Partnership (JLP) as head of infrastructure and service management.

JLP is a British company that operates 40 John Lewis & Partners department stores, 350 Waitrose & Partners supermarkets, banking and financial services, and other retail-related activities. The company is owned by a trust on behalf of its employees—known as partners—and a bonus, akin to a share of the profit, is paid to employees. John Lewis has around 80,000 partners.

Facing up to digital retailers

From 1925 to 2022, John Lewis department stores pledged always at least to match a lower price offered by a national high-street competitor. This pledge was known as 'Never Knowingly Undersold.' However, the rise of internet-based retailers like Amazon made it

Alex Bowles has drawn on his experience of managing technology at Marks & Spencer to help transform John Lewis Partnership into an integrated, omnichannel retailer.

Alex Bowles, Head of Infrastructure and Service Management, John Lewis Partnership

Scan code to watch the full interview.

harder for JLP to fulfil its pricing pledge in an ultra-competitive marketplace.

Additional changes were happening online. Until recently, the Partnership used Ocado's warehouse and delivery services network to send its own-brand Waitrose foods and John Lewis non-food items to customers. This service arrangement expired in September 2020, when Marks & Spencer began a new £750 million contract with Ocado.

Fortunately, the Partnership had invested heavily in its online channels before the coronavirus pandemic began in 2020. As lockdown ensued, all customer interactions became electronic, which tested the group's digital capacity. Waitrose stepped up successfully and delivered 150,000 orders weekly to UK homes. In the post-COVID age, the cost-of-living crisis has placed further pressure on margins and delivery channels.

Finding an economic solution to competitive pressures

Alex and the JLP senior management team recognised that consolidating two separate IT platforms supporting John Lewis stores and Waitrose supermarkets would provide a technological base to compete against online retailers, such as Amazon, and low-price entrants, including Aldi and Lidl.

This consolidation process became urgent when the exclusive service arrangement with Ocado ended in 2020.

Alex commissioned a root-to-branch sourcing review across the two existing IT platforms. The results were clear. The study indicated that moving to a single outsourcing partner could slash operating costs and contribute vital investment funds to modernising the IT estate.

Undertaking digital transformation

Working alongside a new outsourcing partner, Alex began migrating enterprise applications to the public cloud while maintaining two strategic data centres. He chose a microservices-based architecture to re-platform legacy applications and adopted an Agile development approach, DevSecOps.

Alex also automated the applications delivery pipeline to enable nimble responses to fast-changing customer requirements. In parallel, he introduced a software-defined network to connect 40 stores and 350 supermarkets. The newly combined processing and networking platforms gave his team an end-to-end view of the entire JLP IT operation for the first time.

Having consolidated John Lewis and Waitrose online channels

onto a single cloud platform, Alex suggests four key business benefits have emerged:

- Monthly upgrade cycles can take place in days, helping to transform the customer experience to the level offered by digital natives.
- Customer data can be shared between John Lewis stores and Waitrose supermarkets, which encourages cross-selling possibilities.
- The new environment empowers business teams across JLP and can innovate services more dynamically.
- The cloud platform can accommodate burst traffic during busy retail periods, thereby reducing the requirement for costly additional hardware at the data centres.

Modernising the digital kitchen

The JLP digital transformation process brought together over 1,000 IT staff across the two brands. This consolidation process created immediate synergies and meant the best skills could be identified and exploited. In Alex's words, it was like divorcing and remarrying.

Moving to an Agile development environment also created a significant demand for new skills. Alex overcame this challenge by engaging external experts and recruiting more specialists. He believes such partnerships can help companies fill IT skills gaps, especially given the intensive workload of application modernisation.

The mutual nature of JLP means employees share corporate profits, making attracting talent easier. The opportunity to exploit new technologies in a fast-moving retail space appeals to candidates. Alex says JLP tends to have longer-serving IT staff than many other organisations.

Having transformed technology platforms at JLP, the IT team is now focused on exploiting cloud capabilities. Working with AWS has brought new security and data-handling advantages that give JLP an edge in the marketplace. Alex aims to help the Partnership move 100% of its workloads to the cloud over time, but this shift requires a heavy investment in system migration.

Defining the qualities of a Master Chef

Alex has a strong work ethic and a high level of personal integrity. He looks for colleagues who share his values. He says having the best teams simplifies the management process. Alex prefers to coach direct reports on a one-to-one basis. He gives his senior staff members a high level of autonomy and trusts his team to make the right choices.

Alex believes a good working environment creates a happy atmosphere for employees and customers. John Lewis and Waitrose occupy a special place in the hearts of UK customers, and he endeavours to deliver on the brands' promises through constant innovation.

His advice to aspiring IT professionals is to never underestimate the power of hard work. Grab new opportunities with both hands, even if it means changing career direction.

Dutch Central Government

Developing a data-led approach to public services

Ingredients

- Creating a mature approach to IT via strong leadership and shared services
- Developing an IT strategy for the Netherlands with 10 key themes
- Dealing with legacy IT challenges and embracing cloud-based provision
- Providing secure access to trusted information sources for decision-making purposes

Preparing the dish

Lourens has a master's degree in electrical engineering from Delft University of Technology and an MBA from Nyenrode Business University. After starting his career as a naval officer, he made a switch to IT and worked for IBM, Accenture, and Logica. In 2010, Lourens transferred to the customer side and became CIO at the Port of Rotterdam. After working for a range of other public sector organisations, he became CIO at the Dutch Central Government in 2019.

He was challenged to improve the maturity of IT across government, which includes 12 ministries and 140,000 civil servants. Lourens manages a team of 100 full-time employees. His role has three main elements: to promote the right use of IT services across government, to promulgate policies and frameworks on technology, and to coordinate compliance with these policies across government.

Building trust in government processes

Lourens is leading an Information Transparency Programme in response to a political crisis in the

Netherlands and a parliamentary investigation into the childcare benefits process. One of the conclusions of this investigation was that the government is unable to make effective operational and process decisions without access to the right information.

The €800m Information Transparency Programme, led by Lourens and his team, has four key elements: attract and recruit more IT professionals; create transparent communications between people and organisations in government; converge dozens of information management applications; and promote tighter governance across government.

The programme, which includes 900 smaller projects, will take at least six years to roll out. All elements of the cross-government programme are now running and 90% of the budget is allocated. Lourens says the aim is to ensure information is available to the public sooner. Requests for information will be met proactively and results delivered in a standard form. He says the programme will build trust in the government following the political crisis.

Creating an IT strategy for the Netherlands

Lourens wants to make a difference to government by creating a mature approach to IT with strong leadership and shared services. By overseeing and working alongside the CIOs of 12 government ministries and six big public sector agencies, he has created an IT strategy that focuses on 10 key themes, including sustainable IT, procurement, security, and skills.

Work on information transparency is being led by the CIO of the Ministry of Infrastructure. In terms of skills, there are 3,000 IT vacancies within central government and the strategy aims to help public bodies recruit the right people. Lourens heads-up two themes: the creation of a sustainable IT landscape, and the development of shared services.

The Netherlands now has its first state secretary for digitisation. Lourens says this recent appointment is fostering political will for technology-led change and helps the country keep pace with other pioneering European governments.

Dealing with legacy IT

Estimates suggest it could take as much as €10 billion to fix the Netherlands' legacy IT issues. Lourens says modernisation and the use of the cloud-based technology is a critical step towards ensuring a modern enterprise architecture.

Lourens Visser explains how he's promoting the effective use of technology and information across government services through a focus on transparency, strategy, and data management.

Lourens Visser, CIO, Dutch Central Government

Scan code to watch the full interview.

He has worked with his team of CIOs to establish a new hybrid cloud infrastructure policy. Lourens says the government has a dispersed and diverse application landscape. An architecture board helps ensure the right cloud suppliers are selected for the right tasks. He bolsters internal knowledge by reaching out to external advisors, such as the CIO of ING.

Managing data

The government is combining data sources to become more effective and efficient. These efforts are undertaken with care. Lourens says incorrect data produces incorrect information, as seen in the country's childcare crisis. Algorithms can have hidden biases and the government must consider data privacy laws, such as GDPR.

Lourens has established a chief data officer structure to establish data management policies. This work puts the citizen "front and centre." Key progress includes the digitisation of letters from tech services. However, it's unlikely that a centralised data lake will be created because of the diverse nature of government information and a desire to respect citizen privacy.

Filling the skills gap

Lourens acknowledges the government's 3,000 IT vacancies

are tough to fill. High-level technical graduates are in short supply, so the government uses traineeships, recruitment campaigns, and also looks for people with competencies to become IT professionals. The government is running pilots in robotic process automation.

New entrants can expect to make a difference, but change takes time. They must enjoy the diversity in operations and the inherent complexity of government. Lourens' personal ambition is to let people shine. He empowers staff and expects them to take ownership: "If you see an opportunity, go for it. Ask for forgiveness, not for permission."

Defining the qualities of a Master Chef

Lourens says he's viewed as a "connector." He's a buffer between his CIOs and the state secretary, which is a heavy responsibility. He communicates regularly with his CIOs. As someone who's fulfilled the departmental CIO role in the past, he understands their work, which helps build trust. He leads by example and, if his actions are correct, people follow.

The role of government CIO has changed radically during the past decade. The CIOs who report to Lourens have their own departmental systems and teams to manage. Today, there is much deeper awareness of how government IT impacts citizens. He believes the mandate of government CIOs will continue to increase.

Lourens advises next-generation leaders to trust their gut feeling. Absorb as much as possible from any job you do. Changing your role every couple of years helps you to learn fresh skills and build your profile.

Tiramisu Icebox Cake by Claire Saffitz

Serves 8

Ingredients:

- 200ml strong brewed coffee
- Shot of Kahlúa
- 3 large egg yolks at room temperature
- 60g granulated sugar
- 2 tablespoons instant espresso powder
- 1 teaspoon of vanilla extract
- generous pinch of salt
- 250g mascarpone cheese
- 350g chilled heavy cream (divided into 100g and 250g)
- 200g package of crisp ladyfingers
- Unsweetened cocoa powder for serving

This favourite dish of Axel Schell has been adapted from *What's for Dessert: Simple Recipes for Dessert People* by Claire Saffitz. Published November 8, 2022, by Clarkson Potter.

Directions:

1. First, prepare the pan. Lightly grease a 20 x 10cm loaf pan and line it with 2 pieces of plastic wrap crisscrossed. Make sure you press the plastic well and leave it overhanging on all sides.
2. Prepare coffee mixture. Combine coffee and Kahlúa in a shallow bowl and set aside.
3. Prepare the egg yolk mixture. First, put the yolks in a medium-sized bowl. Remember, they need to be at room temperature! Grab a small saucepan and add granulated sugar, instant espresso powder, vanilla extract, a generous pinch of salt, and 60ml of water. Bring the mixture to a boil, stirring occasionally to dissolve sugar and coffee powder. When it boils, remove it from the heat and keep stirring for a minute or two. Get ready with your hand electric mixer and place it next to egg yolks. Then slowly pour the syrup into the bowl with egg yolks, beating constantly with the mixer on medium speed. The idea here is to pasteurise the yolks with hot syrup, but be careful and add it slowly. Otherwise, you will have scrambled yolks. Increase speed to medium-high. You want to reach a mousse-like consistency. At this point, the mixture should be cool. If not, leave it for a few minutes.
4. In a separate large bowl, beat 250ml of chilled mascarpone with 120ml of very chilled heavy cream until stiff peaks form. It should take you up to 5 minutes depending on the power of your mixer. Now add the egg yolk mixture, scraping everything from the bowl. Keep your mixer on low speed. You only want to gently combine both mixtures.
5. Assemble the cake. Arrange the first layer of ladyfingers at the bottom of the pan and pour a third part of the reserved coffee mixture, gently soaking all biscuits. Spread the third part of the mascarpone mixture, working all the way to the sides and into the corners. Repeat twice. The final layer should be the mascarpone mixture. Smooth and cover with the overhanging plastic. Press gently and chill for at least 8 hours.
6. When ready to serve, using an electric mixer, beat the remaining cold heavy cream. You can add a bit of vanilla mixer or a tablespoon of vanilla-infused icing sugar. Take the cake from the refrigerator and remove the plastic from the top. Try to loosen the plastic from the sides of the pan as much as possible. Place a platter on top, getting the plastic to the sides and invert. Remove the pan and gently peel away the plastic. Spread the whipped cream over the whole cake and dust lightly with unsweetened cocoa powder.

SECTION 4

SIX DEFINING QUALITIES OF A MASTER CHEF

"Successful leadership in today's rapidly evolving digital environment calls for softer skills that emphasise adaptability, imagination, curiosity, and empathy over 'command and control' practices."

Outstanding IT leadership is more critical than ever before. As the pace of digital transformation continues to quicken, the best CIOs, CTOs, CDOs and CISOs rely on six key characteristics that help them turn the threat of disruption into an opportunity. They use these traits to lead the creation of new technology-enabled business models that generate a lasting competitive advantage.

That's one of the critical findings from our first two CIONET Cookbooks: comprehensive best-practice analyses highlighting successful characteristics of leaders in an age of constant digital transformation. In this edition, such qualities are even more prominent given the accelerating pace of change taking place due to digital influence on customer behaviour and business structures.

In the current environment, Master Chefs must be more than leaders within their own domains. As well as leading agile and adept technology organisations, these Master Chefs need to create the conditions for a genuine Digital Kitchen rather than the traditional compromise of an analogue/digital hybrid. Quite unlike the IT environment that has predominated before, this outward-facing department exposes its methods to diners who relish its first-class experiences.

Our analysis suggests that Master Chefs of the Digital Kitchen excel across six traits: they exude curiosity, imagination, purposefulness, authenticity, dynamism, and adaptability.

1. Curiosity: stimulating business innovnumbeation in a timely fashion.
2. Imagination: displaying open-mindedness to diverse perspectives from multiple sources.
3. Purposefulness: digital leaders ensure that corporate cultures align with the emerging digital age.
4. Authenticity: leading successfully by encouraging and inspiring others across their organisations.
5. Dynamism: fostering an ability to adjust rapidly to fast-changing conditions.
6. Adaptability: keeping an eye on new problems.

These six traits are distinct, yet they interlink regarding leadership style. Master Chefs display all these traits, but they adopt and adapt them in a way that creates excellent results for them as individuals and for the people they lead, the businesses they work for, and the customers they serve.

Today, traditional enterprises face a new challenge: surviving and thriving in the digital age. CIOs must deal effectively with a complex mix of fast-changing conditions, whether embracing new ways of working, dealing with broader macroeconomic change, or exploring emerging technologies and staving off disruption.

This section shows how Master Chefs of the Digital Kitchen go beyond delivering IT operational excellence and serve up innovation for customers, whether external clients or internal employees. Here are more details on the six characteristics defining successful CIOs.

PLAYBOOK 4

THE SIX DEFINING CHARACTERISTICS OF DIGITAL LEADERSHIP

In an age of technology-enabled change, the CIO role is more important than ever before. This section describes the six characteristics that define the Master Chefs that we have interviewed for the CIONET Cookbooks of 2022, 2023, and 2024. It illustrates how such characteristics can provide the necessary lubricants to synchronise the three spinning gears mentioned in our introduction.

1. CURIOSITY

Demonstrated by	The knowledge and hard skills required	The soft power required
A. Spotting weak signals internally and externally	■ Finger on the 'pulse' ■ The emergence of tech and trends	■ Create connected ecosystems ■ Be widely networked ■ Build C-suite credibility
B. Awareness and understanding of business models for digital	■ Business acumen ■ Assess the business model ■ Refresh the business model	■ Engage and influence stakeholders and staff
C. Complete understanding of the user experience	■ Systems, processes, hardware, AI, software, and apps. ■ Data exploitation ■ Machine learning	■ Have empathy and understand the voice of the customer ■ Build trusted partnerships
D. Generating new ideas	■ Sprints	■ Create inspiration

The best CIOs have a curiosity and a passion for everything new. Master Chefs are constantly searching for weak signals, whether in terms of emerging technologies or fresh business trends. Curiosity is now an essential trait for effective digital leadership.

Curiosity isn't a solo activity. Successful CIOs engage closely with people and parties across and beyond the IT department. They explore and research weak signals internally and externally with colleagues and customers. By spotting these signals quickly and testing their viability, CIOs stimulate business innovation promptly.

Master Chefs focus their attention on the user experience, whether that's in terms of the end customer or the employee. They work with line-of-business managers to understand internal requirements and deliver great products and services that meet customer demands.

Great CIOs exploit information. They use data to elucidate trends and inform their decision-making processes. They also use data analytics, machine learning, and artificial intelligence to personalise customer experiences across online and offline channels.

2. IMAGINATION

Demonstrated by	The knowledge and hard skills required	The soft power required
A. 'New' versus 'improved' thinking	■ Emerging tech in hardware/software ■ Current gap analysis	■ Forward-thinker
B. Business practise know-how	■ New tools ■ Digital platforms ■ New skills ■ Current organisational design structures	■ Open culture ■ Experimentation mindset practices
C. Application of tactical imagination (e.g. hackathons and innovation units)	■ Collaboration tools	■ Engagement of staff and customers ■ Communication

Master Chefs are always open to new ideas. Gone are the days when the successful IT leader was defined by their ability to keep technology systems up and running. The best CIOs look far beyond the enterprise firewall and are open-minded to diverse perspectives and views across a broad ecosystem of peers and partners.

The CIONET Cookbooks exemplify how IT can enable and accelerate business innovation by providing new tools, digital platforms, and skills. The imaginative use of innovation can involve entire shifts in business models. It might also require the more tactical use of imagination, such as creating a dedicated innovation unit within an existing business or using hackathons to develop new customer services.

3. PURPOSEFUL

Demonstrated by	The knowledge and hard skills required	The soft power required
A. Having clear business outcomes	■ Business acumen ■ In-house ethnography	■ Clear communication ■ Clear articulation of organisational strategy
B. Sustainable outcomes	■ Environmental, social, and corporate governance (ESG) expertise	■ Storytelling and communications skills
C. Being able to deliver change and transformation	■ Processes to engage with customers ■ Change management	■ Courage, inspiration, and vision ■ Engagement ■ Stakeholder management ■ C-suite credibility
D. Accelerating new business solutions	■ Agile ■ Lean ■ Short sprints	■ Autonomy ■ Motivation ■ Diversity
E. Delivering on promises	■ Skilled people ■ Appropriate tools and resources ■ Appropriate organisational structures	■ Focus and commitment ■ Accountability and trust

Organisational culture is one of the most critical differentiating factors separating successful digital transformations from unsuccessful ones. The CIOs from around the globe featured in our Cookbooks make it clear that the traditional IT structures and methods of the past are not fit for the fast-developing business requirements of tomorrow.

The watchword is purpose: Master Chefs identify clear business outcomes and create a purposeful IT organisation where they, their teams and their ecosystem partners understand clearly what needs to be achieved. Moreover, reaching these targets is satisfying for the people who meet them and sustainable in terms of their environmental impact.

Perhaps the most visible development in modern IT practices is to employ Agile methods to accelerate the delivery of new business solutions. By applying lean thinking and Agile methods, such as short sprints, Master Chefs are baking success into the digital projects they undertake on behalf of the business. This new Agile way of working must be adopted cross-business and with solid forms of governance, so that everyone works to agreed standards.

What's clear is that purposeful CIOs develop a strong internal culture. Master Chefs foster organisational approaches to diversity, inclusivity, flexibility, and sustainability that extend across individual characteristics, values, beliefs, and backgrounds to ensure corporate cultures align with the emerging digital world.

4. AUTHENTICITY

Demonstrated by	The knowledge and hard skills required	The soft power required
A. Having a clear vision	■ Organisational IQ ■ Sector IQ ■ Global trends	■ Openness ■ Passion
B. Leadership	■ Understand the 'rhythm' of the business ■ Flat structures ■ Meritocracy system for advancement ■ Collaboration and knowledge-sharing tools and processes	■ Humility ■ Inspiring ■ Being a 'conductor' ■ Connector ■ Sensitive to impact ■ Communicator
C. Digital talent attraction, development, and retention	■ Benefits of diversity ■ Organisational diversity goals ■ Hiring practices	■ Inspiring leadership ■ Role modelling ■ Being a sponsor, mentor, and coach

The best digital leaders envision the organisation's direction and can bring others on that journey. When new challenges arise, people within the IT department and across other lines of business look to these CIOs for guidance.

So, why do people trust these leaders to make the right decisions? Because they're authentic—and their passion for their role and desire to make the business more successful shines through.

Crucially, authentic leaders don't dictate the direction of travel. The best CIOs show humility. They lead successfully by encouraging and inspiring others, working across silos to eliminate obstacles that block change. The Master Chefs in our Cookbooks use terms like conductor, orchestrator, and connector to describe this proactive and supportive approach.

Master Chefs also recognise the importance of communication. They understand that the correct language is crucial to gaining organisational responsibility and influence. Digital transformation is often about implementing systems and services, but the board is interested in outcomes, not bits and bytes.

5. DYNAMISM

Demonstrated by	The knowledge and hard skills required	The soft power required
A. Being a change agent	■ Automation tools ■ Generative AI ■ Public cloud	■ Courage, inspiration, and vision ■ Persistence ■ Stakeholder management ■ C-suite credibility
B. Partnering with external organisations	■ How to bring systems and services together	■ Building trusted partners
C. Being a rapid responder	■ Open source ■ Agile development ■ Problem-solving ■ Distinguish 'urgent' from 'important'	■ 'Love the problem, not the solution' mindset ■ 'Experiment and fail fast' mindset

One of the key messages in our Cookbooks is that modern CIOs are dynamic. If change is now the overriding constant in business, whether responding to crises, adopting digital services or switching business models, then adopting flexible business structures and IT systems based on open-sourcing and Agile development methods must be the way forward.

However, this work is complicated. Legacy technology is a universal problem that all CIOs must tackle. Master Chefs are replacing legacy systems with web-based applications that flex to meet fast-changing external demands. While it's a huge task, it brings big rewards.

CIOs that break free from the old world of legacy systems and waterfall techniques create the dynamic IT department that a modern business requires. Instead of a proliferation of discrete systems and silos of data, Master Chefs bring systems and services together on modern, cloud-based platforms. They help the business procure its own solutions safely and securely.

Effective CIOs work with external partners tactically to develop flexible platforms for change. With trusted partners developing cloud-based solutions to business problems, internal teams focus on strategic issues that generate value for the enterprise.

Incredible results in such extreme circumstances show the value of a dynamic approach to business technology. CIOs will continue to face new challenges, but they must love the problem rather than the solution. Technology is simply the conduit to reaching business objectives—and the more flexible the platforms, the better for all concerned.

6. ADAPTABILITY

Demonstrated by	The knowledge and hard skills required	The soft power required
A. Escaping your comfort zone	■ Risk analysis ■ Scenario planning ■ Tech-led solutions	■ 'Can do' attitude ■ Learning mindset
B. Being chameleon-like	■ Options for handling intractable challenges ■ Problem-solving	■ Flexible ■ Diverse ■ Open
C. Being a 'sponge' for knowledge	■ Comprehensive understanding of the environment	■ Continuous-learning mindset
D. Driving exponential growth	■ Intrapreneur	■ Growth mindset

Finally, digital leaders are adaptable in an era of almost constant change. They recognise that flexibility is an essential ingredient for a successful technology career. They can adapt, almost chameleon-like, to any conditions they encounter and excel at delivering innovative solutions to what might seem like intractable challenges.

The speed of technological change continues to quicken. In 2021 and 2022, digital leaders were consumed by efforts to embrace new ways of working in response to the pandemic. Today, new generative AI technologies threaten an overhaul of businesses and occupations.

CIOs cannot afford to sit back and wait. Pioneering digital leaders keep an attentive eye on new problems to solve and harness innovative solutions from an ecosystem of people and partners. They work with the business to develop technology-led solutions to their peers' challenges. They are always ready for significant change.

In many ways, adaptable digital leaders act like sponges. They seek out new knowledge and approaches, surrounding themselves with trusted experts. CIOs' ability to adapt to exponential change and work with a broad church of partners and technologies is vital.

The rapid pace of change has become the new normal in our digital world. One thing we know for sure, however, is that great digital leaders adapt to whatever comes their way. Master Chefs apply a 'can-do' attitude. They always move forward and look to escape their comfort zones whenever they can.

Christian Palomino's Vesper Martini

Ingredients:

- 60ml Tanqueray nº10 Gin, or any other London Dry Premium Gin of your choice
- 30ml Absolut Vodka, or any other Premium Vodka made of cereal; avoid potato-based vodka
- 15ml of Cocchi Americano, as it's the closest drink to the discontinued Kina Lillet included in the original recipe
- Garnish: lemon twist

This is the favourite drink of Christian Palomino.

Introduction prepared by Christian:

As a mixology aficionado, I can't conceive of a dinner that doesn't start with a cocktail to kick in a wonderful evening. One of my favourites is the Vesper Martini. It's a twist of the classic Dry Martini that includes both gin and vodka and has an interesting history. The Vesper is one of those few cocktails that have an indisputable creator: no legends and no claims from different Bars or Hotels on being the first ones who served it. That creator isn't the average barman or chef, he's Sir Ian Fleming himself, who described it in his James Bond novel Casino Royale. In the book, the secret agent claims the drink to be his invention after ordering it from the barman. Later on in the novel, 007 names it after the first Bond girl, Vesper Lynd.

Another interesting fact is that the drink is now undoable in its original version. The gin brand Ian Fleming used, Gordon's has changed its recipe over time, and Kina Lillet, the aromatized wine with quinine that substitutes the classic Dry Martini's vermouth, was discontinued in 1986. So, whatever Vesper Martini you drink nowadays is going to be an adaptation of the original.

Directions:

1. Prepare a mixing glass, filling it with ice and some water to make it chill cold, and do the same thing with a martini cocktail glass unless it has been previously frosted in the freezer.
2. While the mixing glass gets cold, get your bottles of Gin, Vodka, and Cocchi Americano and prepare the lemon twist.
3. Empty the mixing glass and fill it again with the best quality ice you can get. Add the Gin, Vodka, and Cocchi and mix it well. I like to stir it at least twenty times to make sure the drink gets cold.
4. Serve the drink in the frosted martini glass through a double strainer, spritz the lemon twist over the glass to add the lemon oils to the drink, and then garnish it.

PLAYBOOK 5

LEADERSHIP: HOW TO LEAD AS A CIO IN THE DIGITAL WORLD

The pace of change across the technology landscape continues to quicken. Innovation comes in many forms, whether adopting the Internet of Things (IoT), implementing immersive technologies or exploiting generative artificial intelligence (GAI).

CIOs will be expected to help their organisations shape a business strategy that places these innovations front and centre. Yet, as they're executing innovation, CIOs will still be required to ensure day-to-day IT systems are secure, resilient, and operational. We believe this dual role of innovation and operation calls for new digital leadership capabilities.

Defining the modern CIO

The key role of the modern CIO is to focus on business and people leadership rather than being limited to technical responsibilities. Success is about bridging the gap between the business operating model and the power of technology. Technology should be used to help reimagine the business, providing greater efficiencies and accelerated revenue growth.

Building on the foundations for change

The good news for CIOs is they have ample experience to deliver change. CIOs operate across the organisation, which allows them to identify and remove functional silos that impede performance. IT extends to every business area, from product development and manufacturing to supply chain and customer service.

Using process and system thinking, CIOs can identify blockages and implement workarounds. Process automation, for example, can be applied to create an organisation that is agile and responsive to the marketplace. Master Chefs have also adopted public cloud platforms to replace on-premises hardware.

Yet more fundamental change is afoot, and we believe the opportunity to deploy AI and other emerging technologies will be a game-changer. Investing in modern technology can be expensive, but modern platforms are crucial for sustainable, long-term growth. All CIOs must argue the case for modernising core infrastructure and re-platforming applications.

Fulfilling your leadership role successfully

Our research suggests several guiding principles to help you succeed as a digital leader. First, inform your IT and business organisation about the purpose of technology-driven growth and innovation. Until people buy into your end goal, transformation will often fail to deliver the promised results. Successful digital leaders are outstanding storytellers.

Second, trust and empower your teams and hold people accountable for their actions. In an agile organisation, people operate in semi-autonomous teams. The CIO sets direction and gives each team a high level of autonomy. As organisations become more agile and adaptive, the teams that work on projects spread beyond IT and encompass every business function. Empowerment then becomes the mantra of an effective, modern organisation.

As a CIO, you must also believe in yourself and your leadership tasks. Being a CIO is demanding, and many distractions can interfere with your day job. These diversions can create noise that disrupts you from your purpose. Great leaders have the self-confidence to overcome obstacles that can deflect them from their chosen path.

Finally, be open and learn from others. It would help if you found strong mentors throughout your career. CIOs should also pass on the things they know. Constant feedback is essential in helping you and your teams to develop professionally.

How to play a strategic role in your organisation

The strategies that have supported heritage companies for decades and sometimes centuries will no longer work. Business strategies in the digital world should reach beyond sector boundaries and engage various ecosystem partners in all industries to deliver new value.

Influencing the board

While creating these business strategies in a digital world is far from straightforward, board members in all sectors know how technology helped the business cope during the coronavirus pandemic. In the post-COVID era, the board has a heightened interest in how digitalisation can help the business respond to new demands.

Digital leaders must provide a convincing case to boards to modernise core infrastructures and applications. Making this case isn't easy in a cost-constrained environment. However, a strong case is a necessary first step in a longer journey towards delivering an agile and responsive digital business structure.

Clarity of purpose is key for CIOs who want to influence their board members. Think about conducting short one- or two-day experiments, which deliver 'clickable' prototypes demonstrating digitalisation's benefits. If the board shows interest, the next step is to find a paying client to take the idea forward.

Digital leaders should focus on a few individuals on the board who can act as influencers in selling technology-led proposals. That concentration will be nothing new to smart CIOs, who now spend most of their time on business rather than technical matters. Business-savvy CIOs will expand their responsibilities into areas such as transformation, which they will often fulfil alongside their CIO roles.

Delivering business transformation

Despite the gains of the past few years, long-standing perceptions of CIOs as techies continue to persist in some organisations. In an ideal world, CIOs who prove their abilities can rise to the business's upper echelons. However, the road to a CEO position is frequently blocked by the CFO, who is seen as a safe pair of hands.

In some ways, CIOs don't help themselves. Digital leadership comes in many forms, and there is growing confusion over the titles, including CIO, CDO, CTO, CISO, and more. This lack of consistency complicates the role and hinders prospects for promotion. CIOs must demystify these titles to acquire the authority to transform their organisations.

For CIOs given the reigns to transform the business, empathetic leadership will be a crucial success factor. All business leaders have a personality that draws on a spectrum of capabilities, such as empathy (EQ) and intelligence (IQ). Successful CIOs are willing to experiment and think big while remaining grounded in the current business.

Finally, we suggest inclusivity is the secret sauce for successful transformations. This inclusiveness should include diverse teams within the organisation and a broad range of external partners drawn from wide ecosystems. Effective digital transformation reaches beyond sector boundaries and involves non-traditional partners.

Conclusion: Adopt leadership qualities now

We are pivoting from an analogue to a digital era of business that requires new leadership characteristics. This pivot will demand a change of guard at the top of the business and the demolition of multiple management layers. Only by embracing this change in leadership will businesses be able to survive and flourish in the fast-emerging digital economy.

LET'S GET COOKING

As we have witnessed in every chapter of the third edition of the CIONET Cookbook, a new digital landscape is emerging at an unprecedented speed. Within this environment, our Master Chefs are being placed centre stage in the business as a revolution continues.

Given recent unexpected macroeconomic and geopolitical events and the rapid pace of technological developments, we can be confident that further radical change will come. No one can predict with certainty how world events will unfold during the next year, never mind 20 or even ten years from now. However, whatever happens next, we already know that the corporate world of the future will be very different to the one we all grew up in.

So, how do we, as leaders and active participants in this revolution, navigate safe passage for our families, colleagues, organisations, and nations in these turbulent times? At CIONET, we deeply believe in the community's power to assist in this endeavour. Across almost two decades, we have established leading communities of practice in Europe. With the active support of our national advisory boards, we have built a flourishing community of 10,000 technology executives.

The power of this community of practice lies in the constant interaction between our members. CIONET holds more than 500 community events annually, ranging from roundtable events and national community programmes to large international gatherings, including CIONEXT and CIOFEST. Our members testify that this constant sharing of experience and best practices has helped elevate the CIO role to full parity with those positions held by their C-suite peers.

Every year, we undertake 'deep dive' TV interviews with 50 of Europe's most influential digital leaders. We publish these interviews on YouTube. These personal stories provide the community with unique and valuable insights into the DNA of its most accomplished Master Chefs. They also help our business partners to engage more effectively with IT leaders at the highest levels of their organisations. We encourage you to watch these interviews on the CIONET TV YouTube channel.

In addition, we undertake a constant stream of research programmes to capture and document the insights from our community events and executive interviews. This Cookbook is just one outcome of our research. We hope you will take full advantage of the many other reports we publish each year in areas spanning technology strategy, innovative methods, and tools.

In conclusion, we hope that by reading our Cookbook and tasting its successful recipes, you will be better equipped to deal with the many challenges and opportunities ahead of you on the journey to becoming digital. As we continue to capture and document recipes from digital leaders, especially via CIONET TV and our many events, we plan to publish further editions of this book as we travel through a unique moment of digital development. In this respect, we thank Red Hat and Intel for sponsoring this third edition of the Cookbook.

We thank you for your interest and participation in this exciting adventure and encourage you to join us at our many local and global events during 2024.

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ABOUT CIONET

CIONET is the leading community of 10,000 senior digital and IT executives in more than 20 countries worldwide, with a major focus on EMEA. Through this global community, CIONET helps orchestrate peer-to-peer interactions focused on the most important business and technology issues of the day. CIONET holds over a thousand international and regional live and virtual events annually, ranging from roundtables, community events, and tribe meetings to large international gatherings, including CIONEXT and CIOFEST. Our members testify that CIONET is an impartial and value-adding platform that helps each member advance their professional development and accelerate beneficial outcomes within their organisations.

For more information, please visit our website www.cionet.com or follow us on LinkedIn and YouTube.

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