



THE OLD & THE NEW

Roundtable Report CIONET and LCL



CIONET



THE SET UP



Martin's Patershof, Mechelen

LCL and CIONET selected the uniquely transformed Hotel Martin's Patershof in Mechelen, which marries its historic character as a former church with modern design elements, as a fitting setting for a roundtable titled "The Old and the New". This gathering, held on 14th March 2024, facilitated an interactive dinner discussion among ten digital thought leaders on the pressing matter of effectively integrating traditional back-end systems with state-of-the-art front-end technologies.

This gathering was part of the partnership programme between LCL, the Belgian specialist provider of data centre facilities, and CIONET, the leading community of digital executives in Europe.

The evening featured expert insights from Koen Vandaele, CIO at Delen Private Bank, and Rocky Woestenborghs, Head of IT for domestic products at ING, focusing on the complexities and strategies of tech integration within the banking sector. Both leaders shared their journeys, including challenges and successes. Their experiences offered valuable insights into the process of technological evolution in the banking industry and led to a lively interaction with the other digital executives from various private and public sector organisations.

This report summarises the main findings of this compelling debate.

THE DEBATE

A strategic imperative for each modern organisation

"We all face the critical challenge of integrating legacy systems with new technologies. This integration is not merely a technical endeavour but a strategic imperative that directly impacts our organisation's ability to innovate, remain competitive, and meet the evolving expectations of our customers and stakeholders." This statement summarises the relevance of the subject to the industry leaders around the table.

Nicolas Van Kerschaver, the CIO of Liantis, an HR service provider, opened the discussion by emphasising the relevance of the evening's topic to his organisation. With an IT department of 300 people out of a total workforce of 2,000, Liantis operates in close alignment with Belgian legislation, offering SaaS solutions to SMEs for HR administration. Nicolas highlighted the ongoing challenge of managing and updating legacy systems according to these changing regulations while underscoring the importance of front-end development and data utilisation in enhancing customer service and distinguishing their offerings from competitors.

Veerle Lauwers, transitioning from her role at Coca-Cola to become Vandemoortele's new CDO, reflected on her experience driving innovation and integrating new technologies to enhance customer engagement, both directly and in B2B contexts. She underscored the critical role of innovation in maintaining market relevance and fostering growth.



Steve Meyns, currently serving as the CTO for the Belgian Justice Department, shared their ambitious undertaking of consolidating 27 legacy systems into a singular, more efficient system. This major initiative, underscored by two ongoing proof-of-concept projects for Cassatie and Strafitvoering (execution of sentence), shows the profound challenges and opportunities of modernising and streamlining complex legacy infrastructures in government settings.

Shafi Ahmed, responsible for enterprise architecture and technical standards at Toyota Europe, provided a compelling story of Toyota's journey from a traditional car manufacturing company to a future-oriented company offering 'mobility'. This strategic pivot necessitates a comprehensive modernisation of applications, a reassessment of existing capabilities, and a commitment to innovation.

Strategic modernisation & simplification at ING



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The trigger

Rocky Woestenborghs, Head of IT for Domestic Products at ING Belgium, embarked on a comprehensive programme to modernise and simplify the bank's IT environment. This initiative was sparked by the National Bank of Belgium's (NBB) assessment, which highlighted two improvement points: the proximity of ING's data centres and the complexity of its IT landscape. Deemed too close for a systemic bank, the data centres, along with a sprawling application landscape of 552 different applications, posed certain risks to the bank's operational integrity.

The response

The response was a phased approach, beginning in 2016, aimed at not only addressing the NBB's concerns but also setting the stage for a future-proof banking environment. The program consisted of several key phases:

- **Cloud Migration and Data Center Consolidation:** The first step was establishing a private cloud in the Netherlands, moving away from physical data centres that were too closely positioned. This move also involved virtualising mainframes, allowing ING to significantly reduce its physical hardware footprint.
- **Application Rationalisation:** A significant reduction in the number of applications was pursued, aiming to eliminate functional duplication and streamline operations. This involved decommissioning outdated systems and adopting or developing new solutions aligned with ING's strategic goals.
- **Technology Standardisation:** ING accumulated 63 different technologies historically, and it aims to substantially decrease this number by the end of 2024. This included setting a target list of technologies for different layers of the IT stack and either modernising existing applications or decommissioning them.
- **Future-Proofing through Decommissioning:** A large transformation initiative focusing on decommissioning all mainframe applications. This forward-looking effort underscores the bank's commitment to moving away from legacy systems that, while reliable, constrain innovation and adaptability.



Leaving the mainframe

Despite the mainframe's efficiency and reliability, the necessity to move away from it is driven by two major risks: the sustainability of the current mainframe platform to cope with future demands and the dwindling pool of engineers with the functional knowledge required to maintain these systems. The transition is estimated to take 8 to 10 years, underscoring the complexity and scale of this endeavour.

The challenges and solutions



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Every journey brings challenges along. One of the main challenge was to convince business units of the value of these IT transformations. Woestenborghs and his team had to demonstrate the indirect benefits of modernisation, such as improved efficiency, simplified processes, and the long-term sustainability of the bank's IT ecosystem.

One innovative approach was to provide COBOL engineers with Java training, enabling them to develop APIs that bridge legacy systems with modern applications. This not only helped in integrating new and old technologies but also in retaining valuable staff by enhancing their skill sets.

As part of the ongoing transformation, Woestenborghs is now responsible for developing a new banking platform, with plans to replace older applications by 2030. This platform will make use of ING group available solutions as much as possible and implement and develop local solutions where needed. This architecture is designed to enhance efficiency, agility, and scalability, accommodating evolving customer expectations and regulatory requirements.

ING chose a strategy of layering APIs and caching mechanisms over its mainframe to allow it to maintain the robustness and security of its legacy systems while enabling the agility and flexibility demanded by modern business functions. Rocky underscores the effectiveness of this strategy, emphasising the unmatched security record of mainframe systems against cyber threats, bolstering his confidence in the system's integrity and the bank's capacity to protect customer trust through rigorous cybersecurity measures.

ING is also mindful of integrating emerging technologies like Generative AI, ensuring they do not repeat past mistakes that lead to new forms of legacy systems. A technology standards board assesses the value and applicability of new technologies, ensuring that innovations align with strategic goals and operational efficiency.

ING's strategic modernisation journey showcases the delicate balance between maintaining operational excellence and embracing technological innovation. By systematically addressing the challenges of legacy systems, rationalising applications, and adopting forward-thinking technologies, ING is positioning itself for sustainable growth and continued relevance in the digital age. This transformation, while complex and challenging, is essential for meeting customers' changing demands and ensuring the bank's competitiveness in the future.

Common challenges & insights

New risks & limitations

The whole fellowship agreed that the increasing demand for backend systems to feed frontend interfaces with customer data introduces new risks, necessitating the decoupling of these environments to safeguard against potential vulnerabilities.

Shafi of Toyota and other tablemates also confirmed the limitations of mainframe systems in supporting emerging business models, such as connected cars in the automotive industry or rapid legislative changes in HR and payroll services. The drive towards a more adaptable IT architecture is not just about technology replacement but about reevaluating IT strategy in response to evolving customer and business needs.



Shafi's narrative highlighted the dynamic and demanding nature of this transformation, which aims to fully realign the company by 2030. Central to this endeavour is a pragmatic approach to process evaluation, determining whether to reuse, buy, or build new capabilities, with a keen focus on leveraging existing strengths and judiciously integrating new solutions.

Koen Vandaele, CIO of Delen Private Bank, testified about his unique journey from the media industry at Mediahuis to the banking sector with Delen Private Bank. Koen underscored that despite the stark differences between the sectors, the challenge of modernising legacy systems to meet evolving customer expectations is a common thread. He outlines three main challenges in this endeavour: the dwindling number of COBOL programmers, the debunked myth of high costs associated with moving away from COBOL (versus the cost of newer technologies), and the lower suitability of COBOL for digital customer interfaces and web solutions.



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Koen elaborated on Delen Private Bank's strategic approach to migrating from COBOL to a modern tech stack, emphasizing the lessons learned from initial attempts to translate COBOL directly into a new stack. The latter scenario revealed the importance of preserving business logic during the migration. The bank decided against a "big bang" migration due to the complexity of COBOL code, opting instead for a gradual, feature-by-feature migration. Koen highlighted the focus on data interoperability between legacy and modern databases, facilitated by a software layer ensuring smooth data routing between platforms.

The value of in-house development and trust

Delen's strategy of maintaining all IT operations in-house, without outsourcing or employing freelancers, is presented as key to maintaining control and ensuring trust, crucial in the bank's discretionary management business model. He stressed the importance of this approach in managing both legacy and modern technology stacks, with a clear preference for on-premises over cloud-based systems to avoid dependency on external service providers.

Bridging the gap between generations of developers

A unique challenge highlighted by Koen is fostering collaboration between developers accustomed to different software development paradigms: the COBOL programmers and the new stack developers. This situation underscores the broader need to adapt to evolving architectures and the paramount importance of security in the development process.

Reassessing the need to move away from COBOL

Koen and Rocky challenged the immediate need to move away from COBOL, arguing that the language still serves core banking functions well. Both advocated for a business-driven rather than a technology-driven approach to legacy system management, emphasising the strategic value of internal documentation and the consolidation of business knowledge.



Perspectives from other industries

Veerle Lauwers and Shafi Ahmed contributed additional insights from their experiences in the beverage and automotive sectors, respectively. Veerle discussed the integration challenges stemming from acquisitions at Coca-Cola, highlighting the need for process standardisation and effective change management. Ahmed contrasted the stable, mainframe-based systems in Toyota's manufacturing with the dynamic, experimental nature of new mobility technologies, pointing out the necessity of mental preparedness for continuous change and the strategic importance of standardisation.



The imperative of data strategy

The panel converged on the critical importance of a coherent data strategy for integrating old and new systems effectively. This strategy includes ensuring data availability, standardisation, and seamless integration to maintain operational efficiency across the board.

Embracing legacy systems as valuable assets

The discussion evolved towards viewing legacy systems not as outdated liabilities but as integral, valuable components of an organisation's technological ecosystem. This perspective included considering the efficiency and sustainability of mainframe systems, advocating for efficient coding practices, and optimising resource consumption.

Legacy systems and sustainability: A modern perspective

An often overlooked aspect of the discussion on legacy systems is their impact and role within the domain of sustainability. Unlike the common perception of legacy systems as outdated and inefficient, ING's approach to their mainframe technology presents a compelling case for the sustainability benefits that well-managed legacy systems can offer.

Energy efficiency

ING has demonstrated that its mainframe, far from being a relic of the past, is deployed on modern virtual machine (VM) technology, allowing for rapid deployment and enhanced efficiency. This modernised infrastructure not only contradicts the traditional view of legacy systems but also highlights their potential to contribute positively to environmental, social, and governance (ESG) goals. The efficiency of ING's mainframe, especially in terms of energy consumption relative to computing power, is remarkable. This efficiency is further emphasised by the minimal physical space the mainframe occupies within ING's data centre in the Netherlands, showcasing an optimal use of resources.

Sustainable design

The shift towards sustainability is not solely about the hardware but also encompasses the software development practices and the mindset of engineers. The current generation of engineers, accustomed to the seemingly limitless resources provided by public cloud infrastructures, faces a learning curve in adopting the efficiency-first approach that characterised the work of their COBOL-programming predecessors. This efficiency is critical not only in code writing but in the overall design of systems that were constrained in terms of CPU, memory, and electricity usage.

ING has actively pursued strategies to optimise computing power and minimise energy consumption. This includes the development of automation routines that effectively manage the lifecycle of VMs and containers, ensuring they are only operational when needed and thus conserving resources. Such practices extend to batch processing, where machines are dynamically allocated for the duration of the batch and then decommissioned, balancing operational needs with ecological responsibility.



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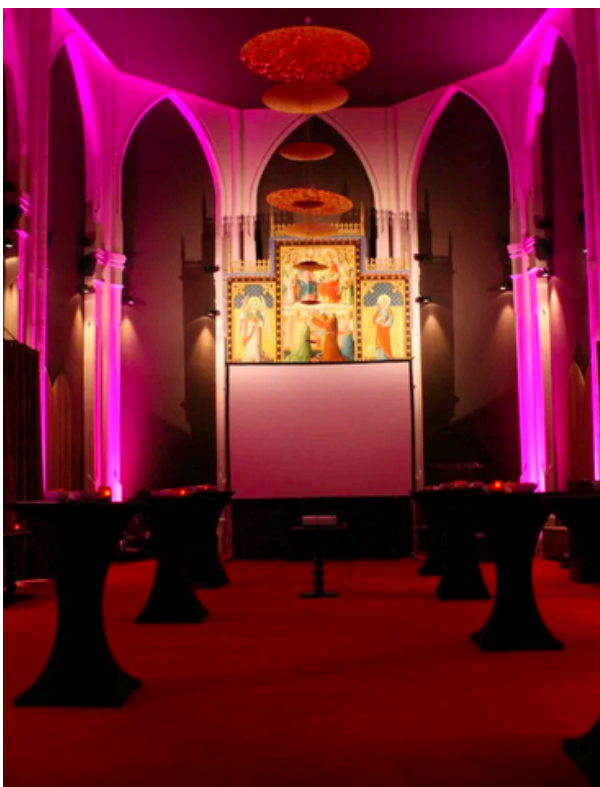
Integrating legacy systems with modern technologies, therefore, is not merely a technical challenge but also an opportunity to reimagine and realign IT practices with broader sustainability goals. ING's example serves as a beacon for other organisations, illustrating that the path to technological modernisation and ecological responsibility can converge, leading to systems that are not only technologically advanced but also sustainable and efficient. This holistic approach challenges organisations to rethink their legacy systems not as obstacles but as integral components of a sustainable IT strategy.

Integrating legacy back-ends beyond the realm of mainframe environments

Business transformation through integration

Veerle Lauwers shed light on Coca-Cola's integration challenges, which were primarily driven by acquisitions and mergers. The company encountered complexities in harmonising multiple versions of SAP across different organisational parts. Such challenges underscored the essence of integration as a conduit for business transformation rather than merely a technological shift. The integration efforts at Coca-Cola highlighted the critical need for process standardisation, people management, and change management. It became apparent that integrating without standardisation would inevitably lead to operational and strategic impasses.

Navigating bimodal environments at Toyota



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Shafi Ahmed introduced the concept of a bimodal environment at Toyota, illustrating a dichotomy between the stable, mainframe-based manufacturing processes and the rapidly evolving new world of mobility. This environment encapsulates the challenge of integrating legacy systems with emerging technologies like AI and machine learning, aimed at meeting dynamic customer needs. Toyota's transition towards modern manufacturing processes signifies a strategic shift that balances the stability of legacy systems with the agility of new technologies. And the pace of this transition is contingent upon the organisation's tenacity and the ability to adapt to technological evolutions.

The implications of shorter technology life cycles

A notable challenge in the context of legacy integration is the shortened life cycle of new technologies. Unlike legacy systems, which could take decades to become outdated, newer technologies may reach obsolescence within months. This rapid cycle poses significant challenges for organisations in keeping pace with technological advancements without creating a new legacy burden. Effective application lifecycle management, regular library updates, vulnerability checks, and flawless CI/CD processes become indispensable to avoid rapid obsolescence.

The imperative of flexibility and preparedness

The journey of integrating legacy and modern systems necessitates a fundamental shift in mindset. The architectural designs and operational strategies that once seemed set in stone must now be fluid and adaptable to constant changes and advancements. Investing in integration platforms that allow for the decoupling of legacy systems and the overlay of modernised solutions is crucial. Organisations must cultivate a culture of mental preparedness, embracing the reality that operational and technological consistency, as exemplified by traditional mainframe environments, may no longer be attainable in the dynamic landscape of modern business and technology.

The insights from Coca-Cola and Toyota illuminated the multifaceted challenges and strategic considerations in integrating legacy back-ends with new front-ends. These experiences underscore the importance of viewing integration efforts as integral components of broader business transformation initiatives, requiring a balanced approach that encompasses technological adaptation, process standardisation, and a forward-looking organisational mindset.



CONCLUSION AND WRAP-UP

The roundtable discussion concluded with a consensus that while the challenges of integrating legacy systems with modern technologies are broadly similar across sectors, the specific context and the resources required for IT modernisation vary significantly. The concept of transformation was debated, highlighting that it doesn't necessarily entail eliminating legacy systems but rather involves **continuous adaptation and the pursuit of interoperability** among diverse technological frameworks.

The importance of persistence and the proactive role of IT departments in driving transformation were emphasized, marking a shift from a business-centric to a well-balanced or even a **predominantly IT-driven approach**. This shift underscores the evolving landscape where IT professionals are increasingly expected to understand business dynamics and vice versa to achieve unparalleled synergies.

Furthermore, the dialogue acknowledged the critical role of human capital in navigating the technological transformation, challenging the notion that technological advancements, such as Generative AI, will diminish the need for skilled personnel. Instead, the conversation underscored the **indispensable value of the right people in leveraging new technologies** effectively.

The discussion also touched upon the complexities and impending regulatory changes facing the data centre industry, as represented by Laurens Van Reijen, MD and Baudouin Corlù, commercial director of LCL. The industry's significant energy consumption rationalisation efforts, among others by the introduction of new cooling technologies like liquid and immersion cooling, point to a future that is, on the one hand, promising in terms of possibilities but, on the other hand, daunting in terms of increased regulatory scrutiny and technical complexity. This evolving scenario underscores the **necessity for collaboration and knowledge-sharing across sectors and players to foster resilience and co-create future technological solutions**. The overarching message highlighted the importance of people in the technological equation, suggesting that the success of future innovations will heavily rely on human expertise and collaborative efforts.

This Round Table was organised by CIONET and LCL on March 14th at Martin's Patershof in Mechelen. Many thanks to all our speakers and participants of this compelling roundtable discussion:

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About CIONET

CIONET is the leading community of more than 10,000 digital leaders in 20+ countries across Europe and the Americas. Through this global presence CIONET orchestrates peer-to-peer interactions focused on the most important business and technology issues of the day. CIONET members join over a thousand international and regional live and virtual events annually, ranging from roundtables, programmes for peer-to-peer exchange of expertise, community networking events, to large international gatherings. Its members testify that CIONET is an impartial and value adding platform that helps them use the wisdom of the (IT) crowd, to acquire expertise, advance their professional development, analyse and solve IT issues, and accelerate beneficial outcomes within their organisation.

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About LCL

LCL offers years of experience and know-how in the field of data centres and co-location. The company has five independent data centres: Aalst (LCL Brussels-West), Antwerp (LCL Antwerp), Diegem (LCL Brussels-North), Gembloux (LCL Wallonia One) and Huizingen (LCL Brussels-South). Thanks to the efforts of its dynamic team and reputable service provision, LCL has grown over the years into a company that offers its services to customers active in many different sectors. Multinationals, small and medium-sized companies, governments, internet companies and telecom operators all call on the services of LCL. Customers have the choice of more than 40 providers and the LCL Cloud Exchange for optimal connectivity. The company is Tier III certified and complies with ISO 27001, ISO 45001 and ISO 9001 standards. LCL also resolutely embraces sustainability and is ISO 14001 certified. In addition, LCL holds ISAE 3000 and ISAE 3402 type II reports.

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