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CIONET UK COMMUNITY PROGRAMME 2023

SOLVING OUR SUSTAINABILITY ISSUES

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Sustainability Issues

This article is written by [Roger Camrass](#), Director of Research for CIONET International. The content is based on the third UK Community Programme event of 2023, held on 17 May 2023 at the Institute of Directors in London and attended by 120 digital leaders.

The context for the event

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 at the Farnborough Airshow last year and we were disappointed by the low attendance. We also conducted a survey with recruiter Harvey Nash that revealed sustainability is not in the top 10 strategic issues for European CIOs.

However, the 120-strong turnout for this sustainability event suggests a big shift in direction since last year. Suddenly, the gravitas of the impending environmental crisis is becoming clear and digital leaders recognise the need for urgent action.

The event followed our traditional format of a Master Class from a distinguished CIO leader and a panel discussion of CIOs and programme sponsors, including EY UK&I, Infogain and Hitachi Vantara. Here is a summary of the session.

Session One: A Master Class by Robbert Van Rutten, Group CIO, Shell plc

New Shell Group CIO Robbert Van Rutten was previously CIO for the company's downstream operations and has also served as CISO and VP for information risk management. Roger Camrass asked him six questions during the keynote session:

1. Where does sustainability fit within Shell's overall business strategy?

Robbert said Shell is committed to evolving from an oil and gas company to an integrated energy company. The 'Power in Progress' strategy is core to this evolution, which focuses on working with customers and across sectors to accelerate the transition to net-zero emissions. The strategy recognises the needs of all stakeholders, including shareholders, customers and the broader communities the company serves.

A key aspect of 'Power in Progress' is a focus on the demands of Shell's customers in areas such as aviation, road transport and shipping. He used the phrase "back from the customer" to describe how Shell designs its processes to reflect the net-zero carbon emissions ambitions of its clients.

Robbert emphasised how digital technologies are an essential enabler in helping Shell achieve its strategic goals. He said half 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.

2. How does IT support the group's sustainability strategy?

Robbert said technology cannot eliminate carbon emissions in isolation. However, technology can play an enabling role in helping Shell's businesses and its customers to redesign their operational processes to become net zero. To ensure technology plays a role in sustainability strategy, CIOs must talk constantly with their C-suite peers and other business partners. Evidence from our 2023 Leadership Deep Dive interviews (see CIONET TV on YouTube) suggests these conversations are increasing in regularity and velocity. Digital leaders place sustainability at the top of their IT agendas for 2023 and 2024.

Robbert said technology cannot be an "afterthought", and CIOs must play an integral role in business decision-making processes. The modern digital leader's role includes the education of peers on the potential of technology to solve business challenges such as sustainability. He advised CIOs to be at the forefront of strategy formulation and execution, not the back end.

3. How can IT contribute the methods, tools and skills to deliver Shell's corporate strategy?

Robbert suggested that IT has much to offer its business partners when it comes to reducing carbon emissions. For example, data from the Internet of Things and predictive analytics can reduce asset maintenance times and produce operational efficiencies that result in cost savings and lower emissions. Robbert said 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.

Robbert said the deployment of artificial intelligence (AI) and low-code tools to frontline workers could be akin to a revolution when it comes to solving sustainability issues. He referred to a chemicals park where an operator had used Microsoft Power Apps to optimise furnaces and reduce carbon emissions. He said these kinds of breakthroughs are dependent on data access. He also emphasised that each region of the world has different characteristics and needs appropriate solutions. Shell IT takes a flexible approach to how it supports global business operations.

4. How can IT address its carbon emissions?

Robbert recognised that IT contributes at least 3% of global carbon emissions currently and this proportion will increase as AI becomes more prevalent. He said "IT must get its own house in order" by making the right choices in a sustainable world. He mentioned a recent IT investment proposal to the main board at Shell. Instead of questioning the potential return on investment, the CFO asked how the proposal would impact carbon emissions.

IT departments should work closely with vendors, such as cloud hyper-scalers, to help reduce the environmental impact of technology. Robbert recognised vendors have ambitious targets and can be effective partners in co-developing sustainable solutions. However, he also said it's essential that each partner understands its objectives before making strategic choices. Shell works closely with several partners to tackle strategic issues, including sustainability.

Robbert said software development processes and infrastructures are "table stakes" in any attempt to reduce IT emissions. Sustainability must be connected to the development process in the same way as security in DevSecOps. He said many developers have not focused enough on carbon efficiencies during the migration to cloud-based applications.

5. What are the implications of sustainability for IT partnering?

Robbert said CIOs and their IT organisations must take ownership of enterprise architecture and data management before seeking strategic partnerships. IT departments should look at other sectors to acquire new techniques. He referred to a recent meeting with SAP, where he spoke to CIOs from different industries. Shell faces other IT challenges alongside sustainability, including the creation of integrated solutions across its core supply chains. Shell must align strategies and the sharing of data between parties to achieve integration.

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 and control carbon emissions. All technology parties, whether internal or external, will share this carbon-reporting responsibility.

6. What is your advice to digital leaders?

First, find yourself in the right conversations with business leaders when strategies are being 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.

Second, consider the entire ecosystem within which your business operates. Robbert mentioned a major project relating to cement production in Asia. Shell and its principal contractor, ABB, understand where and how data flows across the ecosystem. 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.

Third, adopt open standards to enable common data formats and models. Openness helps solve the ecosystem integration problem and simplifies supply chain connectivity. Robbert said he wants to promote off-the-shelf software solutions, such as software as a service, to achieve market standards. He said companies do not compete on the applications they use but on the data sets they employ.

Finally, Robbert said he begins his new position as Shell's global CIO with solid support from the CEO and the executive committee. He said other digital leaders should establish similar conditions for success as they aim to deliver net-zero carbon emissions.

Session Two: Panel discussion

Four distinguished panellists were asked to talk about data sovereignty and to consider its implications for the CIO community and the organisations they serve:

Panellist	Organisation	Position
Andrew Brammer	Allen & Overy	Global CIO and Shared Services Director
Keric Morris	IBM	Global Sustainability Strategy Leader
Donovan Justice	EY UK&I	Partner, Digital Engineering, Digital Detox acquired by EY
Marco Mancuso	Hitachi Vantara	EMEA Head of Strategic Collaborations
Ainslie Beattie	Oracle	Oracle Consulting Technology Sustainability Lead

Here is a summary of the topics that were discussed by the panel.

The IT imperative is to reduce the waste of resources

IBM suggests 80% of all data globally has been generated during the past two years. Moreover, we will likely use more data rather than less to provide businesses with valuable insights going forward. This increasing use of data implies more processing and storage capacity. Donavan Justice of EY UK&I said there are five ways that we can 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 governance (ESG) 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

Andrew Brammer of Allen & Overy said using open standards and platforms can also help to eliminate waste in programming and operations. He suggested IT professionals should be more thoughtful about data storage.

Adopt asset-recycling practices

The consumer obsession with disposable devices must be addressed by vendors. 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. Apple and Samsung need to adopt a similar approach in the consumer device marketplace. 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.

Andrew Brammer of Allen & Overy provided interesting information about the upgrade of physical infrastructure, such as office buildings. When leases are about to be renewed, some companies discover they might be better off financially if they relocate rather than remediate current structures. These cost savings can total hundreds of millions of pounds for large organisations.

Applying appropriate ESG governance

Marco Mancuso of Hitachi Vantara described the opportunities and challenges that come from applying ESG governance in an organisation with several hundred business divisions. Hitachi is committed to innovating in sustainable practices across all its markets, including IT, transportation and energy management. The company is investing $700m in a global ESG programme. Targets include carbon neutrality in its factories by 2030 and overall neutrality across its business operations by 2050.

Hitachi's secret sauce for effective governance is collaboration within the group and across its supply chains. Marco described three key market initiatives, including water processing, railway transport and energy management, where customers demand net-zero partnerships. He also emphasised the power of mobilising internal support for sustainability initiatives.

Ainslie Beattie of Oracle described how shipping and logistics company Maersk has introduced a sustainability index. As many as 200 companies are already collaborating to promote this index and provide data. The significant benefit of this kind of index is that it provides a baseline for ESG compliance. While governments are likely to become active in enforcing such standards, private industry can move faster

Making a start on the net-zero journey

Andrew Brammer said Allen & Overy experienced between an 80% and 90% reduction in energy use when he moved eight data centres to the public cloud. He also ensures 25% of the scoring in Allen & Overy's procurement processes is dedicated to ESG factors.

Donovan Justice emphasised the role that developers can play in reducing carbon footprint. His approach starts with aligning enterprise architecture with ESG guidelines to create carbon-neutral design principles. These principles can be supported by adopting public cloud and SaaS services. He suggested that technology has already surpassed aviation as a generator of carbon emissions. Digital and business leaders must address this growing threat now.

Marco said Hitachi has actively developed co-partnerships with customers in hospitality and travel. He used the example of a pub chain, where digital products and services are being streamlined to deliver a 25% carbon reduction through 2025. Hitachi is also collaborating with Centrica and Uber to implement innovative electric vehicle-charging infrastructures to reduce power demands on the national grid.

Conclusion: No time to waste

Roger Camrass thanked the speakers for their valuable insights and the audience for their enthusiastic participation in the event. He emphasised that 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.

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A pioneer of today's Internet as an ARPA research fellow at MIT in the seventies, Roger has spent over forty five years helping corporations harness the power of new technologies such as cloud, mobile communications, e-commerce, voice recognition and satellite. He was a partner at EY responsible for e-commerce during the dot.com boom. He is a graduate of Cambridge University and MIT, and a visiting professor at the University of Surrey.

See **rogercamrass.com**