Data to decisions

A RULEBOOK TO UNLOCK THE POWER OF YOUR DATA

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INTRODUCTION

If any company still questioned the central importance of data to its future prospects, the last month has dispelled those doubts. As organizations have rapidly reshaped their operations in the face of COVID-19, the move to a distributed working model – which had been a gradual trend – has become an immediate reality for many. CIOs have come to the fore as digital infrastructure has faced its most comprehensive stress-test, and the requirement for secure data transmission has come into even sharper focus. Above all, as the business impact of economic shutdowns around the world are being felt, CEOs are starting to ask: what does the data say? What is it showing us about changing customer demand, economic context and business efficiency? How much can it tell us about what to do next?

In this context, questions that companies have been asking themselves about data for some years have taken on a new level of significance. It is more important than ever that organizations understand the data they process and own, have systems that allow decision-makers to derive insight and extract value from that data, and do so in a way that is both secure and compliant with evolving regulation. It has become essential that the networks underpinning data management can support edge applications – fundamental to powering smart technologies like AI – and are built to cope with exponential future demand.

As companies seek to navigate the path from data to decisions, they face challenges. A new survey of IT Decision makers and network engineers within the Aruba community in EMEA found that 62% identify not being "in complete control of our company's data" as their biggest data challenge, followed by 52% who said they struggled to "translate data into actionable insights". Asked what they would like to be able to do with their company's data that they cannot now, 55% said "make more decisions based on data".

Other research attests to the difficulties executives encounter in accessing the data needed to make better decisions. Last year, PwC's annual CEO survey found that while 94% of leaders consider data about customer needs to be critical or important, just 15% judged the data they were being given as comprehensive (a lower equivalent figure than ten years earlier, suggesting boardrooms are not seeing the benefit of the huge technological leaps taken in that time).[1]

There is still much work to do for companies that aspire to be data-driven, in how they design their networks, organize resources, set priorities and make decisions. For this report, in addition to our study of nearly 180 IT people across EMEA, we also spoke to two data experts, the tech philosopher Tom Chatfield and futurist Andrew Grill, former IBM Global Managing Partner.

Here, we outline six key steps for any organization looking to unlock the power of actionable data as a decision-making force.

1 | RATIONALIZE

Despite the importance of data to almost every organization, for many there is still a basic issue around understanding what data they hold and how they can use it. **Our survey showed that 51% identified not being able to look at data holistically as one of their top three data challenges**.

Addressing this problem must be the starting point, says Tom Chatfield. "You've got to clean up your data because it's garbage in, garbage out. The data you're gathering needs to exist in a clean, manageable, functional way."

That, he counsels, means having a clear and consistent plan for how data should be managed. "You need to have as complete understanding as you can of the data your organization has, who is responsible for it and what the protocols around it are. You need a rulebook for data, clear ownership responsibilities, and a governance group that reports to the top. You need to have covered the basics of security, reporting, management, ownership, compliance and architecture."

For some this will be a bigger problem than it should be, according to Andrew Grill. "Some companies don't know what data they have or what data they have access to." That, he says, is often the product of legacy systems. "A lot of organizations aren't ready for this, they can't plug in an API to their existing mainframe system because it was never built to do that. So they are struggling, they know they need to share the data across their internal platforms but they find it hard."

Having interesting data is one thing, but the value that it creates is closely correlated to how well organizations rationalize and organize what they hold. Without systems that enable the processing of clean, relevant data, they will run into trouble, says Chatfield. "If you don't have that, then when you try to scale your system and start doing interesting things with it, it will either fail and give you the wrong answers or break at some future point."

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2 | UTILIZE

In parallel with finding better ways to rationalize the data they process, organizations need to get ready to make more effective use of it. At all levels, skills must be enhanced and intelligence shared. Companies need to get better at utilizing their collective knowledge base and finding ways to broaden it further.

That should start, Andrew Grill believes, with the creation of a Chief Data Officer role, someone at board level "who is fixated on finding the nuggets of data the company has, those that it needs, and bringing it all together. It is beyond a business analyst or a data architect: someone who has executive responsibility to wrangle the data. You need someone driving it that's not the CTO or CIO, because they are too busy keeping the lights and servers on."

Upskilling must go beyond hiring data specialists into a business. It should also mean, Tom Chatfield advises, utilizing the expertise of people already in the organization. "A lot of the most precious knowledge is already within a company," he says. "Skilling up your employees

so they can have conversations with computer scientists, giving them tools and dashboards and training them to use APIs is often much more valuable than taking a computer science PhD and expecting them to quickly gain an understanding of the sector that a business is operating in."

As well as upskilling, organizations should also focus on putting the right structures in place. Chatfield suggests the creation of data governance groups that broaden the focus of data strategy and delivery. "You don't want to be in a position where you have the CTO and CIO running this stuff and they chat to the rest of the business every now and then. You want to bring together senior people from finance, operations, project management, legal and marketing in a governance group." A group of this kind helps ensure the choices made around data are informed by the perspective of the entire organization. It is also, he suggests, a forum that can be augmented with the inclusion of consultants or non-executives specializing in data to act as external advisors.

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Dr Tom Chatfield
Author, educator and tech philosopher

3 | ORGANIZE

All the talent and expertise in the world will not help a company that lacks the network infrastructure, capacity and resilience to unlock the power of its data. As Tom Chatfield points out, "the big wins are going to be associated with the kind of applications that simply require edge computing, and require data and IoT, to operate." Whether a company is focused on AI, virtual or augmented reality, autonomous vehicles or smart environments, he says, it will rely on "very rich, real-time data that's handled very securely, very quickly, very reliably, with a high degree of assurance and transparency."

Our survey sample suggests many are some way off these capabilities. **Over 40% said one of their main challenges was "the network being able to manage the increased pressure on it", while 21% said their single biggest concern, about a future where data volumes explode, is that their organisation's network will not be able to cope**.

Transformative technologies cannot be powered by a legacy tech stack. So while an application like AI is a priority for many CEOs, some are trying to run before their networks can walk. "The larger an organization is, the more legacy systems they typically have," says Andrew Grill. "They are not AI ready yet, because the data isn't in a format they can make sense of. You need the data going into the AI system to be AI friendly, and plenty just don't realize that. If they've got a lot of dirty data, the AI project isn't going to work."

How should organisations weighed down by legacy system proceed? They need to give up the illusion of control, argues Tom Chatfield. "You have to take the long view and accept you're not going to know where you'll be in in ten years. You're not going to know what the most important data is; maybe it's not even being collected yet. So your system has to be fundamentally scalable, which tends to mean modular and cross-compatible. You have to build a system that equips you to be nimble, confront uncertainty and plug in additional features and capacity as they are needed."

If companies want to benefit from technologies that rely on data being processed at the edge, they need to ensure their networks are able to take them there – both now and into an increasingly demanding future.
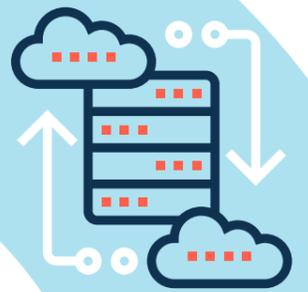
40% said one of their main challenges was **the network being able to manage the increased pressure on it**

21% said their single biggest concern is **the organisation's network not being able to cope**

4 | VISUALIZE

If data is to power business decisions, its insights must be widely and easily accessible across the business. That is partly because senior executives still need to be convinced of its importance, says Andrew Grill. "When you make the data real, especially for executives, they then understand the power and the value of it. It's like being in the car: you don't need to know much about combustion engines to know that something is wrong when the brake light starts flashing."

The same applies throughout an organization, he believes, as long as the data can be delivered in real-time. "If you're waiting for a weekly or monthly report it's already too late. But if you can get visualizations of the data to people on the ground who need it in real-time or near real-time, they can make more dynamic decisions. With APIs and visualization techniques today that can be really easy to do." That chimes with the **55% of our survey respondents who put "more real-time analysis" near the top of their data wish list**.

Tom Chatfield concurs that the vast pools of data large organizations process need to be made more accessible for the people trying to make decisions from it. "People need small, actionable data. There's an almost chemical process, which is both art and science, whereby a company gathers vast amounts of data and then by using a combination of machine tools, and human understanding, turns that into actionable, relevant, human-scale data."

Data visualization should just be the beginning of how organizations make data a more tangible entity. Grill also points to the need for the value of data to be quantified to make return-on-investment tangible. "You need to have a scorecard and put a value on the data, just as goodwill has a value, and advertising and brand has a value. The data must have a value that's on the balance sheet. That's when it becomes real."

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5 | PRIORITIZE

The breadth of use cases for data makes it one of the most exciting areas for any business. The potential applications across a range of transformative technologies, from Internet of Things to artificial intelligence and virtual reality, make the opportunities endless. But therein lies a potential problem: if an organization seeks to pursue every application and does none of them well.

"You have to clarify what you want, given the vast complexity and range of opportunities," counsels Tom Chatfield. "What is it most important for you to do as a company? Why do you need to do it? This is not the world where you can have it all, it's the world where you pick the things that are most important and find a way of doing those well.

That, he says, is why it is essential to leverage the expertise of a governance group that spans an organisation's entire knowledge base. "When you have all those people in the room, they can have a conversation about the realm of the possible, as well as the desirable and theoretical. If you do that well, you'll understand why you're doing something, you'll have criteria for success and failure, and you'll be able to use software and hardware appropriately in terms of opportunity, scalability and risk."

Andrew Grill recommends company-wide hackathons as a means of identifying the most relevant and actionable opportunities. "This allows senior leaders to interact with up-and-coming leaders, and it helps you to quickly focus on business problems. Only then do people realize that they need access to certain data or that they have it already. Sometimes you've got to disrupt yourself to understand where the blockages in the data are."

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Dr Tom Chatfield
Author, educator and tech philosopher

6 | SUPERVISE

Underpinning all these steps is perhaps the most essential: the supervision of data within an organization that assigns ownership and access, and ensures security and compliance. Hand-in-hand with the business opportunities that arise from data are the threats, problems and costs that can arise from failing to safely manage that data. **When we asked respondents what concerns them most about the explosion of data, 28% said it was that employees would not comply with data policies, and 21% that the company would be hacked.**

While organizations must focus on the essentials of data security – from having clear usage policies and robust systems in place to understanding legal obligations and conducting red team exercises – they must also work on the assumption that some attacks will succeed. "Accept things will go wrong and have a contingency plan," advises Tom Chatfield. "Most of the horror stories are of companies sitting on problems when they should have been transparent, moved fast to communicate with customers and reached out to the OpSec community."

Data security does not mean applying the highest level of protection to everything, however. "You have to have an opinion about what you want to be open about, what you want to share and trust people with, and what you need to lock down, check and audit," he advises.

Organizations also need to focus on their people, Chatfield says. "People are the weakest link, always. It's very difficult to hack a lot of hardened, well-tested systems. It's much easier to get to people, whether through spear-phishing, stealing their device or subverting them with bribes or threats. You've got to train your people and pay attention to their digital habits outside the office. You need to think about whether you should be issuing and controlling devices." He recommends scenario-based training as the best way of demonstrating the different kinds of threats in an accessible and memorable way.

Andrew Grill concurs: "Employees are the last mile of security. You can have the best firewalls and the best VPN. But if someone pastes the password file onto their Gmail and it gets hacked, that all goes out of the window."

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CONCLUSION:

Following the rules

In our survey of IT across the Aruba community in EMEA, over 40% rated their company's data management as good or excellent. Another 36% rated it as average. There has been significant progress in recent years in how data is stored, processed and used within organizations. Many now acknowledge data as critical to optimizing their business model, understanding their customers and accessing new technological opportunities. They are making commensurate investments in data skills, systems and security.

But there is still some way to go. Skills need to be enhanced across organizations and knowledge deepened in boardrooms. Priorities need to be more clearly targeted. Networks must be designed with edge capabilities and future scalability to the fore. There can be no let-up in pursuit of enhanced security and compliance.

For a business that achieves all these things, the prize is a shift from data literacy to data fluency: an organizations that lives, breathes and makes decisions based on real-time data. "A business that's in a good place will understand with a high degree of confidence what will bring it benefit and what will not," says Tom Chatfield. "Its data is constantly ruling out things that it should or shouldn't do. It's a company that's comfortably scalable, able to envisage a tenfold increase in the volume of data it's gathering and processing, and confidently able to turn big data into actionable human data. It's an organization in which every single person feels their work is informed by meaningful access to real-time data."

Ultimately, just as companies are moving to the edge in their systems, holding and processing more data at the edge of networks, they must do the same when it comes to organization and management. To unlock the full power of data as a decision-making force, edge networks must underpin organizations that operate with an edge mentality: information, insight and decisions delegated in real-time to where they can make the most meaningful difference.

An organization that wants to benefit from its data must be willing to democratize it.

RESEARCH METHODOLOGY

The research was conducted in March 2020 by Aruba, a HPE company. The study used a blended approach drawing on in-depth qualitative interviews with two industry data experts, and futurist thought leaders Tom Chatfield and Andrew Grill. The project also undertook a snapshot survey from 172 IT decision makers and network engineers across Aruba's EMEA network.

Tom Chatfield

Tom Chatfield is a British writer, broadcaster and tech philosopher. His seven books exploring contemporary culture—most recently *Live This Book!* (Penguin) and *Critical Thinking* (SAGE Publishing), researched as a Visiting Associate at the Oxford Internet Institute—are published in over two dozen languages.

In October 2017, he signed a two-book deal to write international conspiracy thrillers set in the world of the dark net. The first of these - *This Is Gomorrah* - was published in July 2019.

Tom is interested in improving our understanding of digital technology, and its uses in policy, education and engagement. He is currently technology and media advisor at Agathos LLP; Non-Executive Director at the Authors' Licensing and Collecting Society; a faculty member at London's School of Life; a Master's Committee member at the Economics Research Council; guest faculty member at the Saïd Business School, Oxford; and a senior expert at the Global Governance Institute.

Past collaborators include Google, the BBC, Channel 4 Education, Mind Candy, Shift, Flamingo London, Six to Start, Preloaded, Firefish, Future Lab, Sense Worldwide, SAGE Publications, Sugru and Allianz.

As a speaker and broadcaster, Tom's appearances include TED Global and the Cannes Lions Festival; authors@Google; the World Congress on Information Technology; Science Foo Camp; Intelligence Squared; the Houses of Parliament; Aspen Seminars for Leaders; the RSA, Royal Society and Royal Institution; and venues ranging from the Sydney Opera House to the Googleplex.

A launch columnist for the BBC's worldwide technology site, BBC Future, Tom writes and comments widely in the international media, as well as guest lecturing at universities in the UK and Europe. He is a regular on BBC radio and television, and broadcasts around the world

Andrew Grill

Andrew is an expert futurist in the fields of digital transformation, digital strategy and social networks. He speaks to and consults for organizations worldwide to develop their strategy in a world rife with digital disruption.

An experienced corporate leader, Andrew has launched and run technology companies in Europe and Australia and worked with and for some of the world's leading companies including Telstra, Vodafone, Nestle, BBC, American Express, John Lewis, and Unilever. Most recently he was a Global Managing Partner at IBM.

He is also a seasoned TEDx speaker, having presented at 3 separate TEDx events.

Andrew's first-hand experience of the digital world and the power of social media networks spans three decades and can be traced back to the early 1980's when he found himself online via bulletin board and email. His passion and involvement in the digital world continued into later life, launching Australia's largest commercial property website, PropertyLook, and Australian location technology company Seeker Wireless to the world stage. Prior to his role at IBM, he was head of international client strategy for Visible Technologies, owned by WPP.

Andrew regularly contributes to a wide range of media outlets including The Drum, Changeboard and ANZ BlueNotes along with numerous online blogs and publications. He has appeared several times on Sky News, and has been published in the Financial Times, The Telegraph and the Guardian.