QUT pwc CHAIR IN DIGITAL ECONOMY

THE PROACTIVE ORGANISATION

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In Brief

The Opportunity

The digital revolution has produced an explosion of information and globally accessible products and services. The pace and scale of technological and societal transformation is unprecedented. To remain relevant in the new economy, organisations need to remain constantly agile in the adoption of emergent technologies and trends, to evolve their value proposition for customers. Otherwise, the opportunities of the digital revolution will become threats to them. The winners will provide personalised, timely and value-driven products and services that make their customers' lives easier and more purposeful. This will require new business models and approaches.

The Approach

Organisations have to understand the needs, motivations and circumstances of their customers at a highly individual level. It is increasingly possible thanks to the ubiquity of digital sensors, internet connectivity and digitisation of activities, combined with a new generation of analytical capabilities. This enables evolution of relationship between organisations and their customers: from one where customers search out and access products and services when they need them, to one where organisations subscribe to the lives of their customers to provide personalised products and services to them when they see that the customer has a need for them. We call this new relationship a proactive one.

The Rewards

A proactive organisation is focused on understanding its customers' needs. It aims to deliver value even before the customer is aware of these needs themselves. This approach drives ongoing evolution of products and services. Organisational benefits include discovering opportunities to enhance the lives and experiences of customers and offering them before the competition is even aware of the opportunity. Completely new products and services can be created, and all relevant products and services are accessible to customers easily. By proactively facilitating lives of their customers, proactive organisations become trusted partners that the customers prefer.

Contents

1. Why be a proactive organisation?

We live in an age of mass information, innovation and opportunity unprecedented in both the scale and speed of change. An unparalleled opportunity to create value, insight and fulfilment lies amongst the exponentially increasing volume of emails, tweets, blogs, reports, sensor data, open data and other information now available to virtually anyone, anywhere on this planet (Hilbert 2012). But it is also potentially a curse of information overload, lost focus and drowned out value.

For both individuals and organisations, time is consumed with processing this information deluge and by the mass of decisions incumbent on us by this information availability (Hemp 2009). Our cognitive load is being exceeded by trying to navigate through the sea of information, rather than being directed towards the kinds of critical tasks and decisions that would add real value and meaning to our lives and organisations (Porter and Millar 1985). Meeting our needs can become more, rather than less, challenging with the seemingly infinite number of products and services available. Perhaps even more relevant, however, is the challenge of identifying and understanding our needs in a world that is changing more quickly than our ability to see and understand these changes and how they can affect our lives (Hallowell 2005).

In a digital world, where our activities and lives are conducted online and the surrounding environment is actively monitored and measured through digital sensors, digitisation creates a lasting trail of digital fingerprints that can collectively reveal patterns and insights into our lives.

Increasingly, organisations are using sophisticated analytics and data algorithms to gain unprecedented insight into the patterns, trends and changes in the world, and into the needs and experiences of their customers. Organisations that use such insights evolve their offerings and practices, delivering greater value to their customers, and stay ahead of potentially disruptive threats. In this way, organisations can become trusted partners in their customers' lives. They can identify and provide personalised responses to the customers' evolving needs, and simplify and facilitate their daily lives and activities.

By seeking to deliver personalised value to customers and delivering these offerings when they need them, through existing channels, organisations come to understand the lives of their customers better than the customers themselves. If they wait until a customer is asking for a product or service, it may be already too late. In a globalised world, other organisations have a chance to fulfil these needs. Some of them may be able to find ways to proactively offer products or services. The customers will lose value in the latency between becoming aware of their own need and meeting it.

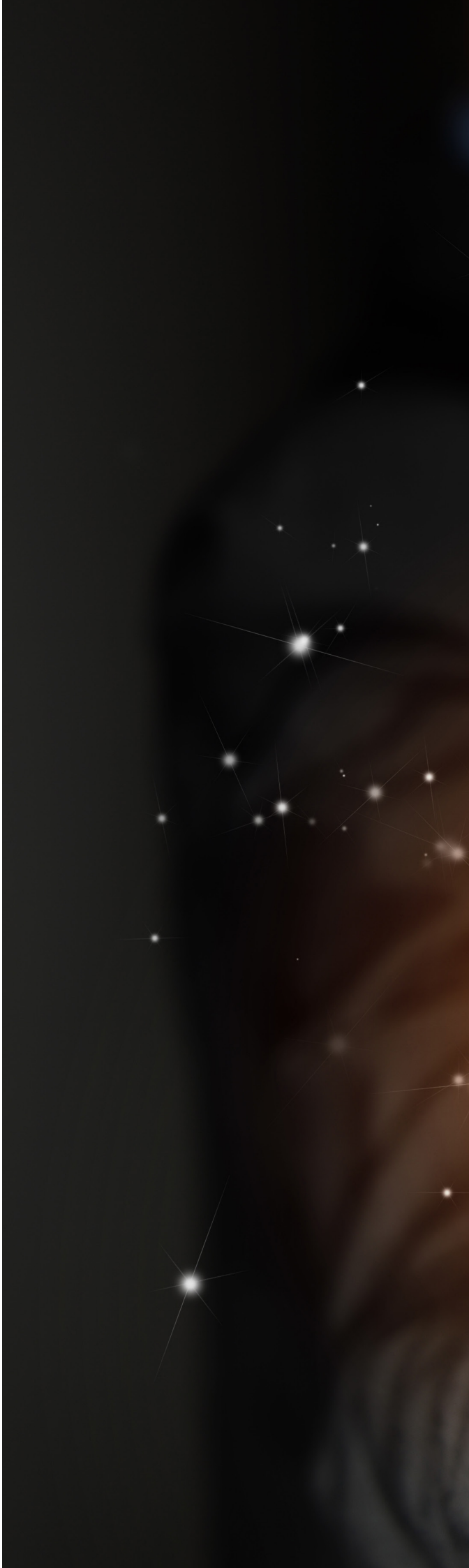
Transition to this world stems from the rise of consumer expectations. As individuals and businesses, we produce a growing volume of digital data as part of our everyday activities. We consent - either explicitly or implicitly - for organisations to use this data on the expectation that they will provide improved value to us through services that make our lives easier and better. The proactive organisation's ultimate value proposition is to partner with their clients to tailor and personalise service offerings. In this way it assists its clients by removing the need, time and attention required to filter through information sources manually, to determine the best fit.

There has been a paradigm shift in the operating environment for organisations. In the past, data could be controlled by organisations for their own commercial advantage. Now, data is widely available and customers provide the data expecting organisations to offer them value in return. Organisations must compete in how quickly and strategically they can utilise the data to offer customers ever increasing value. The same can be said for an organisation's internal customers - their workforce - and how they harness the data available to create workplaces that attract and retain skilled and valuable labour. Customers - internal and external - are highly

mobile, and within globalised marketplaces there is increasing competition – hence organisations need to continually revise and increase their value proposition to retain and gain new customers, and remain viable.

We expect to see more and more organisations taking over mundane tasks in the future, allowing customers to focus on more desired, value generating, activities. There will be organisations that deal specifically with our physiological needs - ensuring clean air, clean water, food, shelter and clothing - and perhaps even our safety needs. Here, the governments of the future could feasibly provide proactive services to assist citizens to avoid undesirable events such as family violence, homelessness, abuse and economic challenges such as unemployment. Many more organisations will develop new value propositions benefiting and streamlining our lives by using the increasingly accessible data and in response to changing customer expectations. From organisations that manage our money based on the financial goals, to brokerage services that design the perfect personalised holiday plan based on our availability, stress levels and other preferences. Organisations of the future will strive to hold the privileged position of a trusted *proactive service provider*, simplifying our lives. They will be subscribing to our digital signals to identify relevant products and services often before we know ourselves of our need.

The organisational desire to hold this privileged position is not new. What makes it possible and available now is the volume and accessibility of digital signals to organisations large and small, the development of algorithms and affordability of computing power to process the data and provide meaningful insights, and changing customer expectations and demands to automate aspects of their lives. This confluence of demands, availabilities and capacity, flags the tipping point for organisations to adopt a new approach, both internally and externally.

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2. How proactive organisations work?

The shift from the economy of corporations to economy of people (Barrett and Bennett 2015) creates an environment where the time is ripe for organisations to better understand and utilise data to design and deliver services personalised for their customers. Becoming proactive is not a choice, but a necessity. Let us investigate how organisations can achieve it.

2.1 Identifying and capturing the digital signals

Living our daily lives in a modern world, we produce a constant stream of digital fingerprints. Our purchases, the sites we search on the internet, the times when we use our electricity in our homes, our likes, dislikes, views and comments - all leave digital traces in some way. Whilst individually these digital fingerprints provide little value, collectively and in comparison to data of those similar to us either geographically, demographically or behaviourally, the fingerprints can provide insight into the events and experiences taking place in our lives, and the patterns and trends around us that might influence us. We call this collection of digital fingerprints that provide a meaningful sign of an event or preference a *digital signal*[1].

Definition: A digital signal is a meaningful set of data points, with each data point potentially originating from a different source, describing an event or preference of an individual, business or an object, in a particular context.

Definition: An event (as understood in this document) is a detectable change in one's circumstances, which causes a need for a response or action.

Digital data is being constantly generated and shared all around us. Retailers share sales' statistics with vendors (Stefansson, 2002). Utilities share service availability information, public transport providers share location and arrival times of buses, and governments share vital real-time and trend-level statistics (Shadbolt et al. 2012). Individuals share their physical activity information, check-ins to venues, and - through Internet of Things devices - increasingly share more about their households, and often personal lives. Privacy issues aside (we discuss potential perils further in the paper), we see an increasing openness in organisations and individuals to capture and share their digital signals (Jordan 2014). Cloud solutions, allowing organisations and individuals to store their data and perform business logic online, make it easy to share data and digital signals. The data is already in the cloud, potentially accessible by everyone interested. After the data has been identified, its value recognised, all that needs to be done is the change of privacy and ownership of it. Following the release of data, it can be analysed, and the insights used by the partnering proactive organisation.

> A digital signal is a meaningful set of data points, with each data point potentially originating from a different source, describing an event or preference of an individual, business or an object, in a particular context.

Whilst exponentially increasing volumes of digital data are being collected, stored and even shared, the full potential of this data remains underutilised. Organisations rarely appreciate the potential value of this data to provide powerful insights into their operating environment and their customers. Similarly, the use of next generation data analytics to transform discrete and often disparate datasets into meaningful digital signals and insights is still an emerging practice amongst leading organisations. Most organisations are also yet to realise the opportunity - and imperative - of proactivity, and to adopt internal operating practices and culture that enable this, including to be highly agile, customer-centric and transparent.

1 The term digital signal is also used in other fields, for instance electronics and signal processing, and refers to a different phenomenon there.

Just like the first electric engines replaced steam engines, and organisations properly adapted only after some time, we see a similar trend these days - switching to a cloud, big data and advanced data analytics model is happening now, but it will take more time for organisations to realise the true potential of the new setup.

> An event is a detectable change in one's circumstances, which causes a need for a response or action.

This access to big data, and the emergence of sophisticated analytics, allows organisations to identify and interpret patterns and trends in the world and in their customers' lives. Understanding these patterns and trends enables the organisation to then pick up meaningful *digital signals* from individual customers that show that a significant event has occurred, or is likely to occur, in their life. For example, analysing clusters of terms that people searched for in Google by region in the United States allowed Google to predict flu outbreaks faster than was possible using hospital admission records (Shaw 2014). We see more and more similar examples of using digital signals to offer related services. Businesses are packaging deals - for instance airlines selling travel insurance, offering hotel bookings and rental cars while purchasing a flight ticket. Increasingly the offers are becoming tailored to the needs of an individual making the purchase.

The technical developments of the past decades made it easy for organisations to access information about their business partners and customers. In the past the prevailing model was for organisations to wait for their customers to trigger business transactions, which often happened late in the decision process of the customers. Now, organisations can subscribe to digital signals of their customers. This allows them to be closer to them, enabling a more intimate relationship. The approach where product and service providers are subscribing to digital signals generated by potential consumers is turning the traditional subscription model on its head.

2.2 Identifying the right moment to offer services

Customer centric organisations try to provide as much value as possible to their customers. And there is a consensus that the more an organisation can learn about their customers, the more value can be provided. As our worlds become increasingly digital, we can expect disruption in existing value propositions. By reframing the customer problem into a broader context, you can see the true impact of the interaction you think is important in your customer's life. These important interactions can be broken down into *events*. With any event, there are critical aspects that occur before, during and after that determine the success, failure or even the occurrence of an event. Positioning throughout these events and by being trusted to subscribe to customers digital signals, allows the business to be proactive in customers' lives, assisting with and taking the lead for customers through high-impact or high-volume aspects of their lives.

> The approach where product and service providers are subscribing to digital signals generated by potential consumers is turning the traditional subscription model on its head.

While reactive organisations wait for customers to reach out to them to start the product or service delivery in response to a particular event, proactive organisations understand that ability to build trust and consume digital signals shared by the customers allows them to partner with their customers even before the event has happened. The ability to subscribe to digital signals of their customers allows organisations to offer their services at multiple stages of a customer journey:

- *Forecast: prediction of significant events.* Thanks to access to a continuous stream of digital signals, organisations can predict a need for products or services. Sometimes it is straightforward - a particular business transaction taking place will mean a need for particular type of tax advice in future. In other cases a more sophisticated analytical approach may be needed, for instance

by analysing sales information of a customer, the vendor will predict, with a high dose of accuracy, when a stock-replenishing delivery needs to be made.

- *Fact: detection of significant events.* By subscribing to digital signals, organisations may notice a significant event even before the customer does or is even able to. Consider an insurance scenario where the insurer may become aware of a water leakage before the owner does. A reactive organisation cannot respond in such situations, a proactive organisation can address the issue even before the customer becomes aware of it.
- *Act: support after an event has taken place* - being there with customer when actions are taken by the customer allows an organisation to communicate with a customer and further support them in this step. In non-proactive scenarios, this is usually the first time an organisation can work with a customer.

Fig 1: The Customer Journey

The ability to join the customers in the earlier stages of event journey allows organisations to create more value for customers.

2.3 Identifying the right mode of service delivery

Subscription to digital signals and a trusted relationship enables businesses to do more than just deliver the same products and services at different points in time. Proactive organisations can offer products and services even before the customer is aware they need them. Additionally, there is a potential of new products and services to be delivered.

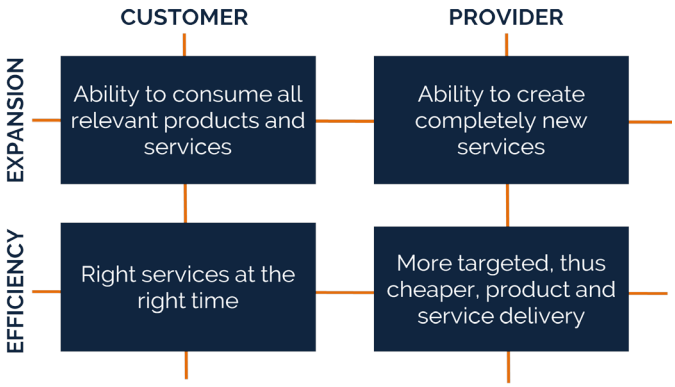

Fig 2: The Customer Expansion Matrix

An organisation that provides a product or service when it is needed, and not after it has been requested, is a *proactive organisation*. It is characterised by low latency[2] and driven by prevention and a desire for early resolution. Proactive organisations are trusted partners and can become invisible to customers.

Based on our research, we distinguish three levels of proactivity: recommender, assistant, autopilot.

- *Recommender*: the proactive organisation provides better understanding of a situation. It includes contextual information and possible options of what to do. At the *forecast* stage, the proactive organisation acts as an expert, sharing insight into the future situation of the customer. The value is in partnering with a customer to understand the future. At the *fact* stage, the proactive organisation acts as the first responder, alerting the customer to a particular situation. The value is in being the one who informs the organisation first. At the *act* stage, the proactive organisation helps by providing a better understanding of the situation (providing benchmarks, showing how others have decided etc.). In each case, the opportunity for the proactive organisation is in being the first service provider for the customer, should they decide to act.
- *Assistant*: the proactive organisation suggests particular products or services that a customer should use based on the event. At the *forecast* stage this might mean suggesting preemptive measures, or products and services that can help the customer prepare better. In most cases

2 Latency is the duration between the time a need for a service or product has arisen (often before a customer realises it) and the time the service or product has been provided.

the only role of the customer is to accept the proposed solution. At the *fact* stage and *act* stage, the products and services offered are ones that directly respond to the event. Immediate solutions may differ slightly from those offered after a while.

- Autopilot: the proactive organisation acts on behalf of the customer. In the *forecast* phase the focus is on prevention of a negative event or amplification of a positive one. In the *fact* phase, the products or services are delivered immediately when the event occurs. As proactive organisation on this level acts on behalf of the customer, there is no *act* phase anymore in the customer decision process.

2.4 Seven traits of a proactive organisation

While studying proactive practices of organisations, we identified seven traits that they display. Below is a guide for organisations to characterise, measure and determine whether they are proactive. The traits include: Customer centricity, Initiative, Data focus, Transparency, Trustworthiness, Agility, and Environmental awareness.

The focus for proactive organisations has shifted from single-transaction interactions, towards providing continuous value to the customer in an ongoing relationship with them.

1 Customer centricity: obsession about putting customer first

The proactive organisation puts the customer at the centre of their focus to a new extent. Rather than a "box seller" mentality where companies optimize products and services for a market segment according to a relatively generic and broad set of criteria and assumptions, proactive organisations have intimate knowledge of the needs and journeys of their individual customers. Proactive organisations are using the explosion of digital technologies in combination with advanced analytics to understand their customers' needs, journey and life.

In this way they can also track the value they create for their customers. They are continually engaged in the process of refining their offering and value proposition to better meet their customer's needs and to make the customer's journey easier, more engaging and enjoyable. As a trusted partner, proactive organisations make their customers lives simpler by either recommending, providing personalised assistance or automating tasks, services and products in response to their customers' digital signals.

Proactive organisations become the customer's greatest advocate, tracking and understanding the trends, opportunities and threats, and proactively adapting their products and services to help their customers be ahead of the game.

The focus for proactive organisations has shifted from single-transaction interactions, towards providing continuous value to the customer in an ongoing relationship with them. Organisations are invested in ensuring the customer achieves success in the long term – they are constantly seeking win-win scenarios that enhance the value proposition to both the customer and the organisation.

SAP has migrated their software services to the cloud and tracked how their customers were using these software systems – allowing them to recognize that customers were only using certain features but having to purchase an entire package. Now, they allow customers to only pay for the features they use, attracting a new cohort of savvy customers to their products and providing greater value to customers (Iansiti and Lakhani, 2014).

2 Initiative: not waiting for customers to start the conversation

Proactive organisations are tapped into their customers' journeys and lives to understand their immediate needs and circumstances. They push products and services out to them in a personalized and timely fashion. They do not wait for their customers to search, find and pull these products and services for themselves.

Sometimes, a proactive organisation meets the needs and desires even before the customer knows that they have them. They connect with customers in places where the customers already are, and integrate their product and service delivery

> A proactive organisation meets needs and desires even before customers knows that they have them.

seamlessly into their customers' lives, providing value just at the point when it is needed.

For example, Google Now application synchronises a user's location information, calendar and personalized history to provide information and suggestions to enable their day to flow more efficiently. Among others, it provides an alert to leave for their next appointment that includes the fastest route to get there based on their current location and traffic alerts, and a link to the LinkedIn profile of the person they are meeting.

Oakland-based solar panel provider Sungevity delivers a proactive and personalized service right from the sales call. Customers receive a personalized letter in the mail that includes a unique URL, which takes them to a Google Earth image of their home with solar panels superimposed on the roof. They receive customer calculations of the energy savings these would provide based on the characteristics of their home and roof. The customer can immediately click to converse with a sales representative who already knows who this customer is and can provide additional information that is highly personalized to them. Customers are proactively sent a set of contact details for households in their area who have agreed to act as a referee for the company, and whenever the customer returns to the website. The content they see is updated to reflect the conversations and engagement they have already had. When the customer signs up for a solar package, the landing page of the website will automatically display the progress of the permit and installations, and alerts are sent to the customer when milestones are achieved. Once installed, customers are regularly sent updates on their panels' energy production and tips for how to optimize their household energy system (Edelman and Singer 2015).

3 Data focus: ability to capture and understand digital signals

Data is the lifeblood of the proactive organisation. Digital signals provide insight into the customer's life that enables products and services to be personalised and delivered to the customer right when and where they need them. Big data technologies enable organisations to correlate personal data against the external environment seeing patterns and trends as they emerge. Proactive organisations use these insights to take advantage of and create new opportunities whilst also identifying and adapting to potential threats. Data drives decision making and strategy within proactive organisations, with deep understanding of their current and future operating environments and their customers. Interviews with executives from 330 public North American companies revealed that those which were in the top third for their industry and characterised themselves as being more data-driven, performed better in financial and operational areas (McAfee and Brynjolfsson 2012).

Proactive organisations recognise the critical value of data and are continuously looking for new sources of data and ways of gaining meaningful insights from it. The rapid digitisation of products, services and activities globally creates new sources of data daily, and the evolution of analytics creates new ways of gaining value from this. The critical value of data

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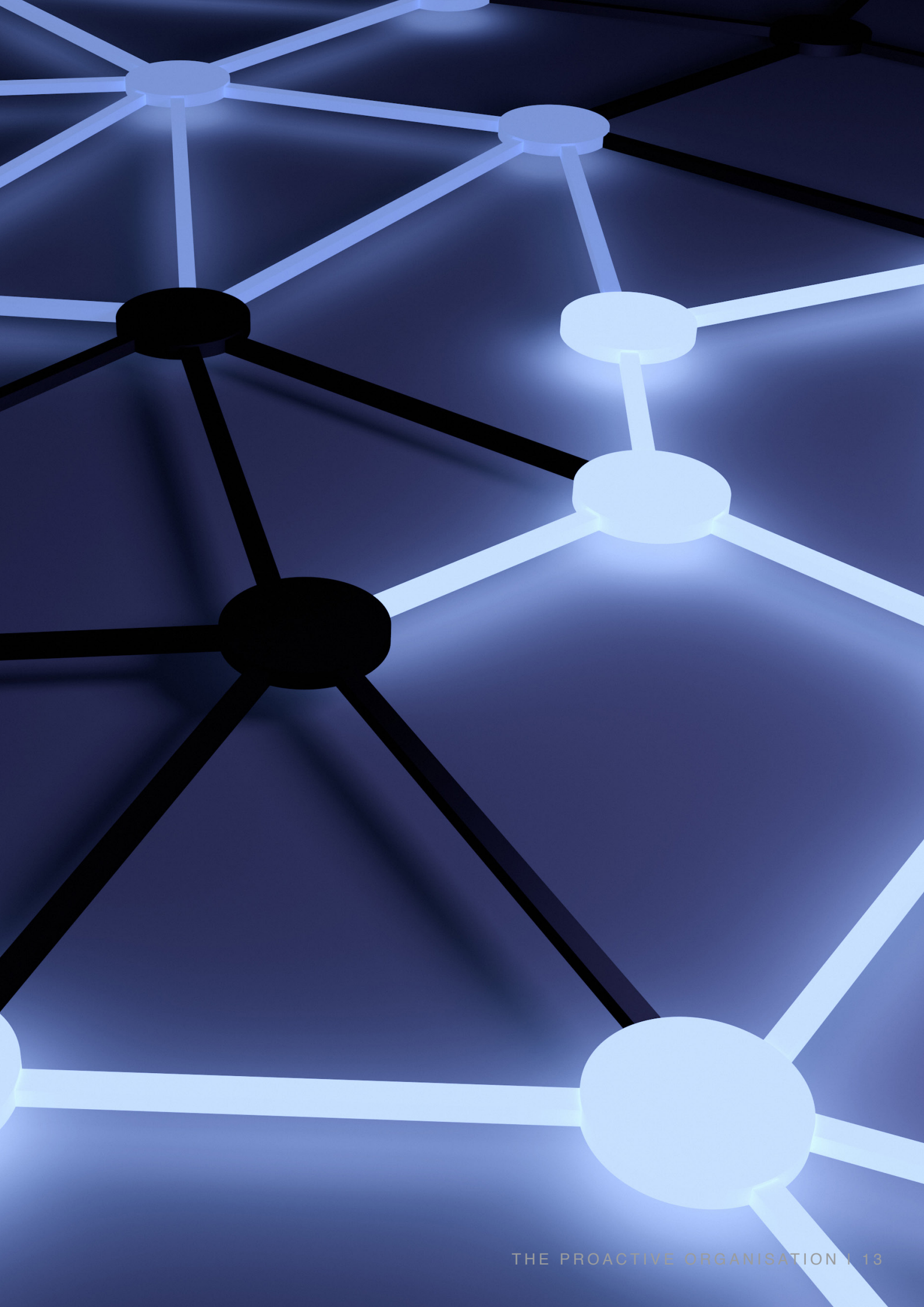
for organisations is being reflected in organisational structures worldwide, with Gartner predicting that by 2017 a quarter of all large firms will have dedicated data units underpinning all business activity (Porter and Heppelmann 2015).

General Electric was famed for selling and repairing industrial hardware for over a century. However in recent years, General Electric lost market share to nontraditional competitors including large software firms IBM and SAP, and emerging big-data startups. These competitors had identified a new value proposition for customers in deriving efficiencies and tangible benefits through the use of advanced analytics and algorithms, rather than buying reliable industrial equipment to perform consistently. General Electric saw this threat of disruption and transformed their business model to become a provider of asset and operations optimisation services through the utilisation of digital sensors and big data. The company has dramatically transformed itself into



a proactive provider of data based services that enable its customers to become more efficient and create new revenue streams. General Electric is now leading the market in internet-enabled devices, with data sensors integrated into every conceivable piece of hardware from turbines, locomotives, jet engines, and medical-imaging devices, enabling General Electric to use advanced analytics to identify and deliver radical new forms of value to customers. Even more remarkable, General Electric now identifies itself as an analytics rather that industrial company, coining the term 'industrial internet' to describe this convergence of industrial machines, data and internet connectivity that are driving transformations of the industry. This transformation underpins why General Electric is the only company to be listed on the Dow Jones Industrial Index today that was also listed in the original index in 1896.

4 Transparency: always providing context of each of its decisions

Proactive product and service delivery requires continuous innovation, established customer trust, and product and service design with intimate awareness of customer needs and expectations. Achieving this requires a new level of transparency for proactive organisations. They need to help customers understand how their digital signals are being used so they know how and why the organisation is delivering products and services to them before they've had to ask, to allay concerns of 'big brother' and unwanted intrusions into their privacy.

Rather than shrouding nascent innovation in secrecy, proactive organisations make this available to facilitate cooperation with other organisations, and to bring customers into the fold to provide feedback and suggestions about whether this meets their need.

Proactive organisations are also transparent in their innovation and development processes to facilitate co-design with their customers and the crowdsourcing of ideas, as innovation cycles become shorter and tighter with rapidly changing external environments. Rather than shrouding nascent innovation in secrecy, proactive organisations make this available to facilitate cooperation with other organisations, and to bring customers into the fold to provide feedback and suggestions about whether this meets their need.

Apple understands the critical importance of transparency, following hacking scandals that raised consumer concerns about how their data and privacy was being managed. Now, Apple informs their customers of exactly how they use their data, and how they manage their privacy. A page dedicated to privacy on Apple's website[3] tells users that "*At Apple, your trust means everything to us. That's why we respect your privacy and protect it with strong encryption, plus strict policies that govern how all data is handled.*" They elaborate on the technologies and systems they use to enable this. Regarding the use of people's data, Apple is equally transparent, stating that: "*Our business model is very straightforward: we sell great products. We don't build a profile based on your email content or web browsing habits to sell to advertisers. We don't 'monetise' the information you store on your iPhone or in iCloud. And we don't read your email or your messages to get information to market to you. Our software and services are designed to make our devices better. Plain and simple.*" They provide details of the exceptions to this where their business serves advertisers through iAds and how this works.

5 Trustworthiness: aiming to be relied upon by customers

Proactive organisations understand that trust is the lifeblood of their relationship with the customers. To deliver products and services proactively to them, customers must provide permission for the proactive organisation to subscribe to their digital signals – gaining insight and access to their lives in return for enablement and facilitation of their lives and goals.

Proactive organisations foster and protect this trust through maintaining transparency about the data they use and how they use it, by providing their customers with control of their personal data, providing suitable recourse in areas of dispute about the data and by ensuring they are always delivering real and tangible value to customers in using this data (Morey et al. 2015). They respect their customers by treating access to their data and lives as a privilege and using this data in ethical and well-understood ways.

3 http://www.apple.com/au/privacy/

The way trust is built in this century differs greatly from the way it was built in the past.

The Prosper Daily (formerly known as BillGuard) application uses proprietary analytics to process anonymous data from across its hundreds of thousands of users to identify patterns in financial behaviour that allow them to alert individual users of potentially fraudulent or otherwise unwanted transactions in their bank and credit card financial statements. Prosper Daily also monitors for potential ID theft, and will help to cancel cards if needed. Where Prosper Daily has found unwanted charges in users accounts, they proactively offer the user help in challenging these charges and having them refunded. Prosper Daily also allows users to track their spending habits and provides personalised savings recommendations. The viability of Prosper Daily depends on the trust of their users and has secured this by only requiring access to financial statements and not bank accounts. In addition, Prosper Daily has established clear encryption and data protection systems and provides users with real value for this access. The company established their reputation with consumers by offering financial security assistance and only subsequently expanded into proactively providing savings advice, noting that if they had not had this foundation of trust, this advice would have felt like advertising to users and eroded their confidence in the company. Further, the savings advice they provide is highly personalised to individuals, such that this is seen as valuable as evidenced by how frequently users follow this advice (Carney 2015, Groenfeldt 2014).

The way trust is built in this century differs greatly from the way it was built in the past. Immediate access to practically any online comment about a business means that individuals and organisations can easily create a picture of an organisation they work with to decide whether they trust it or not. The fact that, increasingly, this feedback mechanism is also integrated with social networks means that trust in organisations is also derived from trust in your networks. Essentially, this model is the same as *word of mouth*, but at a larger, more immediate and more connected way. We now get access to recommendations by many more customers about many more service providers, and in a manner that is accessible to all at all times. Such trust model, tested widely in sharing economy and online commerce platforms, has shown to be successful and even allow much faster and larger growth.

6 Agility: willing to experiment and quickly use opportunities

The pace and scale of transformation across all sectors of the global economy is unprecedented, with innovation transcending geographical, cultural and sectorial boundaries almost instantaneously. Disruption comes from unconventional places, faster than ever before. In this rapidly changing environment, products and services can become obsolete before they've barely begun to be offered. Proactive organisations are building flexibility and embedded intelligence directly into their offerings to ensure these are agile and adaptable to trend and opportunities and that they can continuously improve the value proposition for their customers. Proactive organisations see experimentation as core to what they do and understand that, to remain proactive, they must take risks and be willing to fail. They use agile processes to fail and learn fast, iterate and to innovate rapidly within purposeful structures to explore new opportunities and expose risks. They

They use agile processes to fail and learn fast, iterate and to innovate rapidly within purposeful structures to explore new opportunities and expose risks.

believe that their offerings and organisation are a journey rather than a destination and know that it will continually evolve.

eBay experiments as part of their core practice of doing business. Being an online platform with billions of hits per day, they can conduct thousands of experiments to test variations to different parts of their website and the use of new features to see whether these improve outcomes. They use a structured experimentation process, from hypothesis development, to designing the experiment, to setting up the experiment and assessing costs and resources, to launching the experiment and tracking and monitoring outcomes. This ensures that that eBay has a continuous pipeline of tested innovation and retains a culture of experimentation within their organisation (Davenport, 2009).

7 Environmental awareness: continuously scanning the environment

Proactive organisations intimately know of their external environments. The greatest threat to organisations today is their own unconscious incompetence and not seeing or understanding the trends that could become relevant and disruptive to them. Environmental sensing helps organisations to see and understand the potential impacts of trends and threats and to reduce the latency in their adaptation to these.

The greatest threat to organisations today is their own unconscious incompetence and not seeing or understanding the trends that could become relevant and disruptive to them.

Whilst most managers know of the major trends of the day, many do not recognise how some of the less obvious trends may influence their customers' desires, preferences and behaviour and ignore these as being peripheral to their core markets (Ofek and Wathieu, 2010). Such organisations do not adequately adapt for these trends in their product development and innovation strategies, resulting in missed opportunities to capitalise on customer's evolved expectations and needs. At the extreme the organisations lose their market position to competitors who took advantage of these trends to transform the industry.

Proactive organisations remain intimately aware of the technological, economic, environmental, social, and political trends and their interactions, and how these influence their operating environment and customers – and more critically, can use this insight to create unique opportunities for growth and transformation of the industry (Ofek and Wathieu, 2010).

Interface Carpets was founded by the late Ray Anderson in 1973 in Georgia, USA, and operated for its first 21 years under a standard 'take-make-waste' approach. Anderson understood in 1994 that this approach was unsustainable and that their business could be disrupted through resource shortages, government legislation and market forces - with early indicators of these potential disruptors evident. Anderson established radical sustainability goals for the company and transformed their operations from the ground-up to reduce reliance on non-renewable resources, to slash their waste and to reverse the negative environmental impact of the company. Interface developed a revolutionary service-based business model for carpets where they leased rather than sold carpets, took back used carpets to dismantle and reuse the constituent parts, and redesigned their carpets to be modular to allow worn squares to be replaced rather than entire sheets. This, along with transformations in their manufacturing inputs and processes, has underpinned major cost reductions in their operations and continued growth and has set international benchmarks and market expectations for sustainability, quality and customer experience (Fishman 1998, Thorpe 2014).

Proactive organisations are reducing latency of their commercial or private clients in specific contexts. Common to all proactive engagement models is

- the identification of relevant digital signals
- the ability to cost-effectively capture these signals in a secure manner
- the expertise and ability to monitor and assess these incoming signals
- the ability to identify relevant actions and
- depending on the nature of the engagement model and context to recommend actions to the client (assistant model) or to actually execute required actions (autopilot model).

Proactive organisations require a trusted relationship, appropriate contractual arrangements and an infrastructure enabling the exchange of data, recommendations and where required the remote execution of actions. For the consumer, proactive organisations offer a substantial reduction of search costs as part of the overall transactions costs of engagement. Instead, the consumer can expect "to be found" and this forms the starting point for the transaction.

Proactive organisations are reducing latency of their commercial or private clients in specific contexts. Common to all proactive engagement models is

- the identification of relevant digital signals
- the ability to cost-effectively capture these signals in a secure manner
- the expertise and ability to monitor and assess these incoming signals
- the ability to identify relevant actions and
- depending on the nature of the engagement model and context to recommend actions to the client (assistant model) or to actually execute required actions (autopilot model).

Proactive organisations require a trusted relationship, appropriate contractual arrangements and an infrastructure enabling the exchange of data, recommendations and where required the remote execution of actions. For the consumer, proactive organisations offer a substantial reduction of search costs as part of the overall transactions costs of engagement. Instead, the consumer can expect “to be found” and this forms the starting point for the transaction.

3. Examples of proactive organisations

3.1 Proactive University

The higher education sector is largely built on the model of reactive learning. Based on identified learning needs and interests, students enrol in courses and master defined learning experiences with the tangible objective of receiving a recognized degree as the ultimate reward. This dominating model of learning converts learners who are consciously incompetent (they know what they don't know) into consciously competent individuals (they know what they know).
However, and unique to this industry sector, is the fact that the engagement model between a student and university abruptly comes to an end with the completion of a degree. From then on, the learner is largely on their own in terms of learning and needs to identify what they need to know and where to find relevant learning contents.

> In this business model the purpose of a university is not the provision of a degree, but ensuring personalized, *educational well-being*.

The notion of a proactive university proposes a model in which universities offer post-degree individualized learning services to their learners. In this business model the purpose of a university is not the provision of a degree, but ensuring personalized, *educational well-being*. The latter can be defined as a status in which a person knows what they need to know to master professional or private tasks.

The key value proposition of a proactive university in the ongoing assessment of the current status of educational well-being and the provision of relevant learning experiences where needed. This reduces the learning latency of the learner, ensures higher levels of educational well-being and as a consequence leads to higher competitiveness of the individual, especially in an age where 'man versus machine' becomes the new competition in securing a job.

A prerequisite is that the provider has access to the 'educational record' of the learner so that an assessment of educational wellbeing can be conducted. An explanation of what that educational record may look like was presented in our Digital Identity 3.0 working paper (Mertens and Rosemann 2015). The most simple use of this educational record could be the identification of 'out-dated knowledge' (e.g., in the form of knowledge about an expired standard). More advanced proactive educational services would also consider contextual information (e.g., career ambitions, upcoming tasks) to recommend and deliver relevant learning contents.

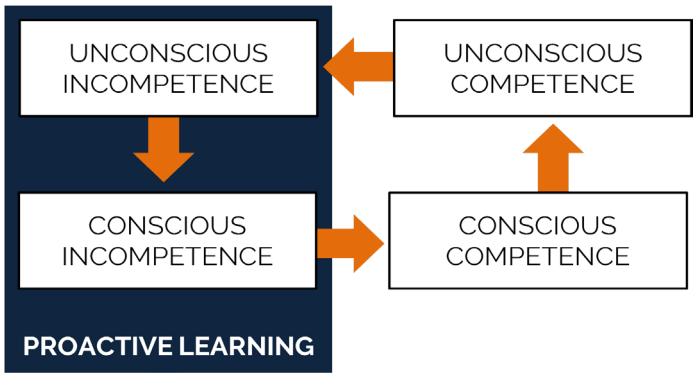


Fig. 3: The Four Stages of Learning (Burch 1970)

These prerequisites show that a proactive university might start with providing additional, post-degree services to its alumni as this would allow – in trusted relationships – building upon the student master records, which have emerged over the years of being enrolled in a certain course.

Proactive learning services have the potential to create entirely new, post-degree revenue streams for universities and could, once scaled up, uplift the educational well-being of entire societies.

3.2 Proactive Consulting

A proactive provider of consulting services responds to a client's problem before the client company is even aware of the problem. As such, proactive consultants provide 'problem identification as a service'. This is in sharp contrast to the typical consulting business model centred on problem solving as a service. At its core, a proactive consulting company reduces

> Proactive consultants provide 'problem identification as a service'.

service latency, i.e. the time from a negative event to the execution of compensating actions.

Proactive consulting requires the client company to share essential, corporate data with the consulting company. Examples for such data could be:

1. from modules (e.g., finance, HR, inventory/ operations) of an Enterprise Systems,
2. generated by assets such as machines/ robots in a factory or vehicles in a supply chain,
3. relevant external data (e.g., exchange rates, raw material prices).

A proactive consulting company would assess such data streams at an appropriate frequency and trigger related actions when needed. This could be recommendations requiring the consent of the client company (e.g., a proposal to increase the capacity of call centre agents in a call centre) or immediate responses (e.g., modification of MRP variables as a result of high inventory levels) in an outsourcing model.

Proactive consulting companies would have a competitive advantage when they are closer to such data than the competition. Such proactive models can already be seen in the outsourced management of corporate assets such as machines, data centres or specific work forces. However, less explored are proactive consulting models relying on sharing corporate data from Enterprise Systems. This could include providing data such as inventory levels to a proactive service provider who would adopt relevant MRP parameters based on the observed performance values or adjusting procurement processes based on changing demand patterns.

3.3 Further Examples

In general, proactive business models can be derived by flipping the model of a consumer (private or commercial client) searching for a provider in response of an event to the provider offering event identification and resolution as a service. The digital economy with the emergence of (big) private data and cost effective sensors (Internet of Things) is just about to open a plethora of innovative business models.

Smart homes and assets (e.g., cars) increasingly will come with subscription services allowing the asset provider or relevant third party providers to provide proactive services, including:

- spotting and resolving utility (water, electricity, gas, Internet) related problems,
- responding to security alerts,
- resolving damage to any household assets (e.g., heating system, washing machine, pool, car).

Providers of services with *usage based pricing models* could provide proactive services adjusting their offerings to fluctuations in consumption patterns. This would mean the end of many established annual engagement models (e.g., insurance industry). Such proactive models could include the proactive adjustment (up- or downscaling) of plans before the consumer experiences a bottleneck in the consumption or the dissatisfaction of being charged for underutilised bandwidth. Combined with the notion of smart homes, one could imagine a reduction in the home and content insurance in the case of the absence of the homeowner (and relevant family members).

Further proactive business models could be envisaged to the extent to which consumers will be willing to *share further private data with trusted providers*, e.g. data about their assets as input for adjusted services from their insurance or financial services providers.

4. Becoming a proactive organisation

4.1 How do I become a proactive organisation?

What if your organisation does not yet meet all the criteria of a proactive organisation? Understanding the seven traits of a proactive organisation is the first step in the holistic transformation.

1. Customer centricity: **Delivering value for your customers should be your core target.** Everything else is secondary.
2. Initiative: **Reimagine your value proposition to take the initiative in customer interactions.** Do not just wait for your customers to tell you what they need - help them find out.
3. Data: **Build capacity to capture and process digital signals.** Focus on signals coming both from your customers and from the environment in general.
4. Transparency: **Avoid being perceived as "creepy" by explaining your customers how you predict their needs.** Customers do not like sneaky tactics.
5. Trustworthiness: **Let your customers see why others trust you - or not. Make trust transparent.** Your customers will appreciate it.
6. Agility: **Support a culture of learning, experimentation and exploration.** In the fast changing world, only agility allows you to remain relevant in the long run.
7. Environmental awareness: **Build a team focusing solely on identifying trends that are relevant to you and your customers.** This allows your business to stay ahead of the game.

With the holistic transformation processes in place, a proactive organisation needs to evolve products and services, the way the business is done. The rest of this section focuses on the task and offers a new tool for organisations to use in the process.

Innovate your business model

Becoming proactive means looking at the business through both a customer-centric and digital lens to understand how these two worlds can fit within the existing business model. According to Porter, the opportunity in harnessing the relationship between customers and business models helps to derive sustainable competitive advantage where "one activity's value to customers can be enhanced by a company's other activities. That is the way strategic fit creates competitive advantage and superior profitability" (1996, p.80).

Any business, whether a startup or a large corporate, has and uses a business model, either implicitly or explicitly (Chesbrough and Appleyard 2007) and business models act as stories that communicate how companies operate. Successful business models answer Peter Drucker's fundamental questions: "Who is the customer?" and "What does the customer value?" While a company's business model describes how it creates value for customers, it must equally explain how it captures values for itself. Parmar, Mackenzie, Cohn and Gann (2014) from IBM argue there are four methods of creating new business; growing internal competencies, customer-focussed exploration, following megatrends and opportunities emergent through digital signals.

> To create this competitive advantage in today's digital world, we need to explore the customer, the business model and the messages and signals that our customers produce.

Therefore, to create this competitive advantage in today's digital world, we need to explore the customer, the business model and the messages and signals that our customers produce.

In the past half decade we witnessed the impact that Osterwalder and Pigneur's Business Model Canvas and Value Proposition Canvas have had on the innovation industry. These are powerful tools containing the core building blocks of a business model. The power of the Business Model Canvas tool lies in its simplicity, its ability to enable fast prototyping and its simple language that links

businesses to theory. And it shows that customer value proposition is central to the value creation and value capture of a business model. A successful value proposition creates value for customers by providing a solution to a fundamental problem within a situation. Teece (2010) contends that even though technically superior innovations can be created, if a company does not address relevant and valuable market needs and set up financial systems to support the venture, then the innovation will fail to sustain its position, regardless of the market acceptance of the innovation itself.

How does an organisation rapidly explore deep customer insights around digital transformation to design new methods of delivering proactive organisation?

These hallmark tools have allowed businesses to develop and redefine their business models and to provide a language platform to communicate these innovations to their internal and external stakeholders. Whilst these tools remain core to any such innovation creation, their broad application does not specifically cater for organisations looking to explore the ever enveloping digital ecosystem and seek to provide solutions to an intimate and informed understanding of individual customers. This is why we created the *Proactive Service Canvas*. It is a tool to serve this purpose. It also is meant to answer the following question: how does an organisation rapidly explore deep customer insights around digital transformation to design new methods of delivering proactive organisation?

4.2 Proactive Service Canvas

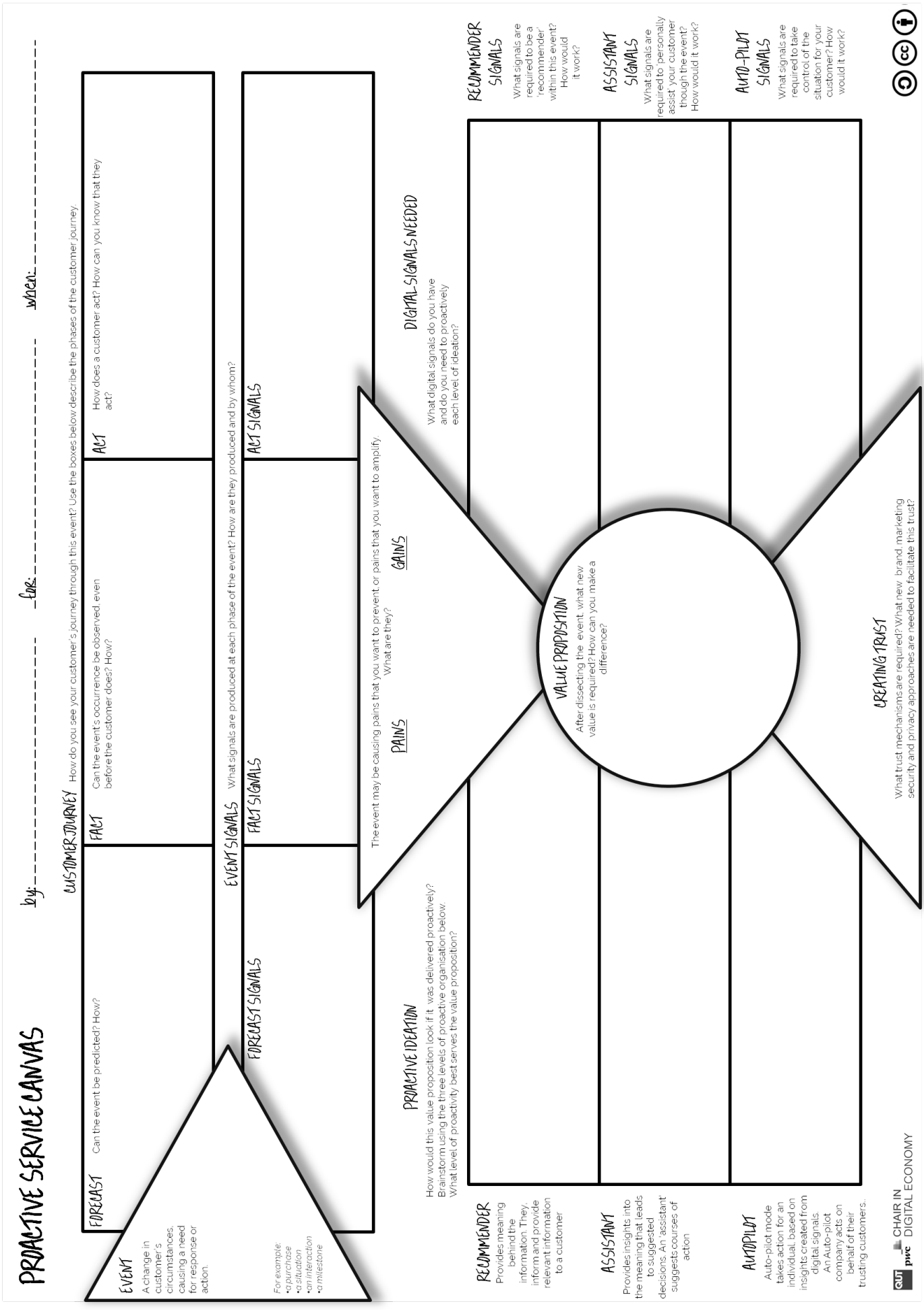
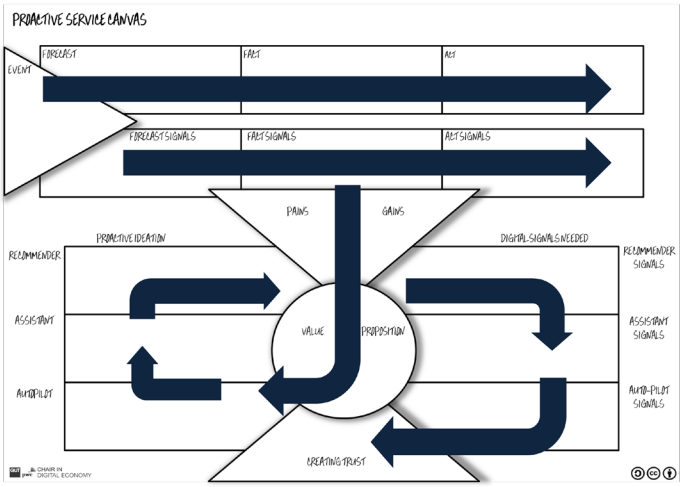


Fig 4: Proactive Service Canvas

The Proactive Service Canvas is a tool to assist organisations looking for ways to shift from reactive to the proactive delivery of their services. The canvas is broken down into eight core elements that let an organisation analyse the current state and explore future options for evolution of their business, whilst encouraging the ideation and integration of proactive business models that follow the three levels of a proactive organisation: recommender, assistant and autopilot. The Proactive Service Canvas is the operationalisation of the Seven Traits of a Proactive Organisation that translates customer centricity, environmental sensing, initiative, agility, data, transparency and trust into a tool helps the design of proactive services.

The flow of the canvas is explained and justified here:



Event

An event is something that happens in your customer's life without them being prepared for it. It is a detectable change in one's circumstances, which generates a potential need for services or products.

The 'event' tile on the canvas focuses first on an interaction, then understanding what broader event it is related to. For example it could be a purchase, a situation, a milestone or even a disruption. By reframing the customer problem into a broader context, organisations can see the true impact of the interaction in the customer's life.

Customer Journey

An event does not occur in isolation. There is a context where activities, interactions and emotions are evident, before, during and after an event takes place.

The Proactive Service Canvas is the operationalisation of the Seven Traits of a Proactive Organisation that translates customer centricity, environmental sensing, initiative, agility, data, transparency and trust into a tool helps the design of proactive services.

In these three tiles, the canvas maps the forecast, fact and act phases of an event to explore and understand the details that inform and affect the customer's event journey.

- **Forecast** Is the ability to predict events. Here we explore how an event can be predicted. Can the service provider or a customer see it coming?
- **Fact** is the ability to be of service when an event happens. In this tile we explore the observation of the event either by an organisation or by the customer themselves. A reactive organisation cannot adequately provide products or services in this situation. A proactive organisation can address this issue, perhaps even before the customer realizes the event has taken place.
- **Act** is the ability to support customers when they take action. In this tile we explore the current interactions that take place to support the customer's actions and the processes that drive this interaction. In non-proactive scenarios, this is usually the first time an organisation can work with a customer.

Event Signals

Signals (or digital signals) are the data generated by customers and other relevant entities (including objects) during day-to-day activities. Digital signals have the potential to inform, impact and provide insight into proactive service delivery. For each forecast, fact and act aspect of an event, there are digital signals that are generated. This row of tiles on the canvas seeks all the direct and indirect signals that surround an event to understand how they could be translated into competitive advantage. Examples include customers sharing their transaction data through online accounting applications, individuals sharing their fitness activities using sports applications or fleet cars continuously sharing their location and other important telemetrics. In many

cases, the digital signals are not utilised to the full extent.

Pains and Gains

The pains and gains from the Value Proposition Canvas (Osterwalder et al. 2013) are a powerful approach to build empathy with customers. This tile in the Proactive Service Canvas explores the potential outcomes of an event. In this tile, we explore the event further to see how the event may cause pains (that we then want to prevent through a value proposition), or gains (that we want to amplify).

Value Proposition

The value proposition lies in the centre of canvas, providing a link between the current and future state of an event. At this point in the canvas convergence takes place and the most salient stakeholder opportunities must be crafted into a proposition of value to the customer. Sitting central in the framework, the value proposition must consider, incorporate and be co-designed by both a company and their stakeholders, to create a competitive advantage that is proactive to customer needs..

Proactive Ideation

This is the ideation section of the canvas. The goal of this group of tiles is to think about how a proactive organisation would approach delivery of the value proposition. Each tile provides a different level of proactivity (recommender, assistant and autopilot) as guidance to inform the ideation process.

- A **recommender** solution would proactively provide information and meaning to a group of alike customers within a segment. A solution like this would orientate, inform and provide relevant information to a customer.
- An **assistant** solution would proactively suggest decisions and actions that individual customers could take, driven from a detailed knowledge of their digital signals. An assistant would not take action for a person, but would make justified recommendations, and often select and suggest the relevant products or services, to do so.
- An **autopilot** solution takes the reigns for an individual, to allow them to focus on other activities. Where appropriate, autopilot mode acts on behalf of trusting customers, ordering products and initiating relevant services.

> "How would this value proposition look as a recommender, assistant, autopilot"?

In each level of proactivity, the canvas user must ask themselves, "How would this value proposition look as a recommender, assistant, autopilot"? There is enough space provided on the canvas to generate a number of ideas for each. What should become clear is a level of proactivity that might be best suited for the customers.

Digital Signals Needed

This column of tiles corresponds to the Proactive Ideation phase. For each selected idea, the canvas provokes the user to explore what digital signals exist, are owned and are needed to deliver on this value proposition and therefore to transform the business offering. Here are some questions to answer when exploring this tile.

- *What digital signals do we already have?*
- *What digital signals do we require?*
- *How can we obtain these? What partnerships do we require?*
- *How can the required digital signals deliver the value proposition in a way that is unique to our business?*
- *How do we ensure the accuracy and reliability of these signals.*
- *Does the value proposition need to change to ensure signal reliability?*

Creating Trust

Customers will assess and weigh up how they trust a proactive organisation. It is for these reasons that the canvas provokes the exploration and design of trust, transparency, privacy and security mechanism, so that proactivity is not misinterpreted as surveillance. Here are some questions to answer when exploring this tile.

- *What does trust need to look and feel like for your customer?*
- *How will this new value proposition highlight the transparency of digital signal use to your customers?*

- *How will you use your customer's digital signals?*
- *How will you ensure data is kept safe from misuse?*
- *What is the impact on your business if trust/ privacy/security is compromised?*

4.3 What could possibly go wrong?

Being granted permission to provide proactive services should be considered a privilege for organisations. It is a testament to a level of earned trust. There are however some significant challenges and risks to observe.

The privilege of using a customer's digital signals and information implies the responsibility of managing and treating that data with respect and confidence. Data security is crucial as hacking and data misappropriations become more regular. Scandals like the Sony XCP anti-piracy software that communicated the CD and IP back to Sony, effectively being classed as spyware, Facebook applications that shared personal details despite a user's privacy settings (i.e. FarmVille and Texas Hold'em) and more famously Apple's location tracking built into their iPhones and iPads, ending in a rare apology from Steve Jobs, are recent examples of data and privacy misappropriations (Duffy Marsan, 2012). When organisations act unethically in the areas of privacy and data security, reputational damage and public relations crises will inevitably follow.

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Privacy is a fundamental human right and respecting it is vital for any organisation aiming to transform to a proactive one. Issues of privacy, data storage, dispute resolution and the longevity of digitised personal data, known as the 'digital eternity', are significantly more serious than just damaged reputation and public relations. In Australia, the Australian Law Reform Commission's report (2014) Serious Invasions of Privacy in the Digital Era outlines recommendations for a framework to enforce organisational standards in privacy and data (Australian Law Reform Commission 2014). Customers need to agree to the collection of the data (opt in) and they can opt out at any point in time and retract and remove any data stored on organisational systems. When discrepancies occur, a fair and ethical recourse mechanism, such as mediation or litigation needs to be provided for the customer. "Companies […] that conceal how they use personal data and fail to provide value for it stand to lose customers' goodwill—and their business." (Morey et al. 2015).

> Close to 97% of customers are concerned about misuse of data and privacy

Close to 97% of customers are concerned about misuse of data and privacy (Morey et al. 2015). Many use encryption services, ad blockers and take an active role in managing their digital identity. Mertens and Rosemann in Digital Identity 3.0: the Platform for the People (2015) outline a platform where individuals retain control over their digital signature, signals, documents and history, with the ability to retract data from organisations if desired. Instead of a such a system, in order to protect their privacy, many individuals generate false and misleading data, impacting the overall accuracy of big data and digital signals. "Lack of good data is the most common barrier to organisations seeking to employ predictive analytics." (Davenport 2014, p. 2).

Another challenge to address is the continuous nature of change. Predictive models are built on algorithms that are based on assumptions such as the variables that statistically show a likelihood of a purchase or engaging in service consumption remaining static (Davenport 2014). As shown previously, proactive service provision is not a 'state of achievement' but rather a process of continuous improvement, iteration and re-engineering. The most notorious example of failed assumptions in predictive models were those used in gauging the likelihood of customers to repay loans leading to the 2008-2009 financial crisis (Davenport 2014).

Algorithms inherently also rely heavily on the quality and accuracy of the input data which is often limited.

Ultimately just because an organisation can, doesn't mean they should. The privilege of being a trusted provider of proactive services implies an elevated responsibility of data stewardship and ethics

The potential for algorithms to display inherent biases and inaccuracies increases with limited data sets, not cross-referenced to other data. Zeynep Tufekci (2015) explores bias in algorithms and says there will always be imperfections in input data and that this is reflected as bias in your program. Take for example Facebook prior to the release of extended reactions. Posts users 'like' are promoted in news feed. This doesn't accurately reflect that a user may be equally as interested in posts that talk about challenges and issues which are not 'likeable'. Algorithms used for hiring staff can predict whether a candidate is likely to experience a depressive episode in the next six months before they have exhibited any clinical signs (Tufekci 2015). When algorithms can reliably predict most of the time how well you'll interact with a team, your predisposition to anger, whether you're a procrastinator, neuroticism and sexual orientation, the ethics of using the data ought to be considered (Golbeck 2015).

Algorithmic bias and assumptions poses the question of liability for inaccuracies and mistakes. In a physical world, when humans are responsible for the decision making, liability has had a long history creating a framework for compensation and recourse. In this new world of digital decision making, recommending, assisting and at times acting for a consumer, who is responsible and bearing liability?

Ultimately just because an organisation can, doesn't mean they should. The privilege of being a trusted provider of proactive services implies an elevated responsibility of data stewardship and ethics. The good news is that organisations transparent about their data practices and policies earn increased trust from their customers. (Morey et al. 2015). We expect organisations to see it as an opportunity and become proactive in ensuring that customer data is used ethically. While businesses are increasingly global, it is imperative for socially responsible organisations to set and follow the right standards. We can already see examples of organisations becoming de-facto global regulators, deciding what freedom of speech really means, what aspects of privacy of their customers need to be protected. And customers show their appreciation by staying with such organisations. In a highly competitive environment, taking a proactive approach to data management and privacy practices provides the access and partnership required to deliver proactive products and services.

5. Conclusions

The proactive organisation recommends and offers services before customers realise they need them. It does so by learning to understand customers' digital signals, using those to forecast events and initiating action early on. The proactive organisation also does not shy away from changing direction and adapting services quickly when, based on understanding of larger trends in the environment, it predicts a change in customer preferences. In doing so, the proactive organisation becomes a trusted partner that effortlessly facilitates and enriches people's lives.

In this document, we introduced the new concept of a proactive organisation and provided you with a tool that will help you redesign your services. Naturally, redesigning services should not happen in a vacuum and requires wider organisational evolution. The seven traits of a proactive organisation provide insights into the goal of that change. Redesigning services and the organisation around them starts and ends with the customer and should be built on relevant, real-time customer insights at every step of the way. This means that no path is absolute or fixed: if customer signals indicate that the strategy does not work, immediate change is imperative. The proactive organisation is built on a culture that is energised by a fast pace of change, is data-driven, and embraces the customer.

We are witnessing a perfect storm: changing customer expectations, new technology trends, evolving business models. The opportunity of becoming a proactive organisation is now, and the tools needed to design novel services are in this document. These are exciting times.

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