



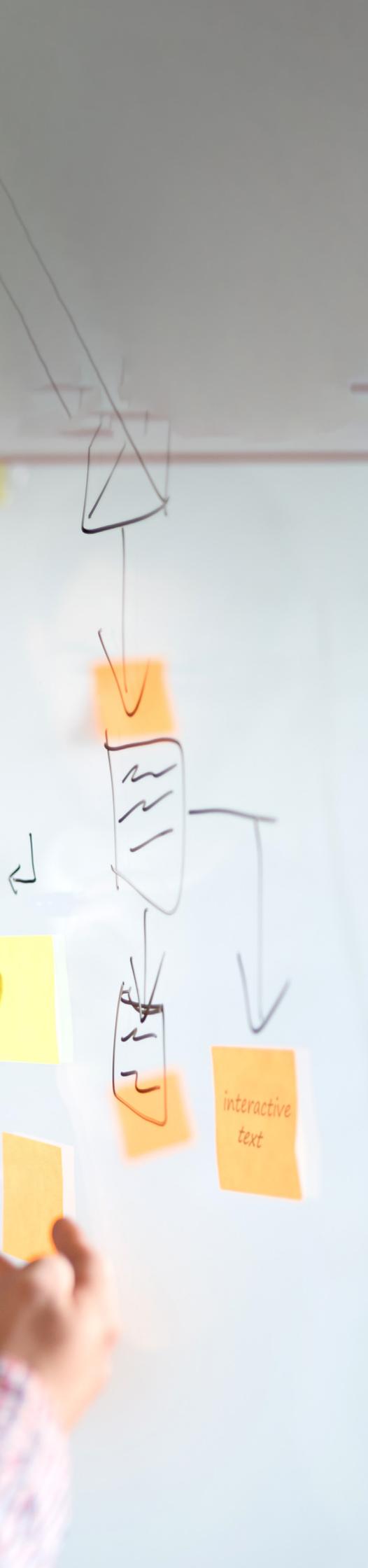
# PERSPECTIVES 2021

from our Asia Pacific Junior Talent

| GET THE FUTURE  
| YOU WANT

# INTRODUCTION





## Take on the challenge?

Picking a first employer is one of the most important choices to be made for fresh graduates. Their level of expectation is high, as it should. The ideal company should offer a learning and supporting environment, fast growth opportunities and match personal values. While they may have interned or completed gap-year assignments as part of their study, this first job will often determine their career path.

We are happy to see many graduates pick Capgemini as their first professional home. When they join Capgemini in Asia-Pacific, they join a thriving company and become part of a diverse collective of free-thinkers, entrepreneurs, and industry experts. It is our role to grow these talents to allow them to find new ways for technology to help reimagine what's possible. The opinions and talent displayed in the second edition of this report show the potential for growth of our junior colleagues and the value they will bring to our clients.

The opinion papers selected for this report are the result of an internal competition ran in 2021, aimed at emulating thoughts and research from our graduate community and generating new ideas. It is very interesting to see many of this year's papers focus on the experience of the new normal for employees, customers, and decision makers. While the opinions shared in this report may not always represent Capgemini views, it brings forward interesting thoughts about disruptions and solutions brought by technology from this new generation of professionals.

I would like to thank all the 45 contributors in this initiative, amongst which the 18 displayed in this report. This group embodies the diversity of our workforce in Asia-Pacific and represent the rich diversity of thoughts and profiles between Japan, Greater China, South East Asia and Australia. We have decided to structure this report around five umbrella themes representing some of our business focuses, each introduced by a Capgemini thought leader. They are **Data & Intelligent Industry** (1), **Customer experience** (2), **Cloud** (3), **Emerging Tech** (4), **New Ways of Working** (5).

By learning from each other every day, sharing knowledge, and always pushing oneself to do better, our colleagues are building their expertise in the domain they want. They are helping our clients, our partners, and our people, to leverage technology and give innovation that human touch the world needs.

I hope you enjoy reading this report, as I did!

Sincerely,



**Olaf Pietschner**

CEO for Capgemini in Asia-Pacific and the Middle East and Member of the Group Executive Committee

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# DATA & INTELLIGENT INDUSTRY



**Khalil Nathani**

Sr Director Capgemini Engineering, India

We have experienced tremendous transformation across industries in recent times, the emergence of contemporary technologies like Connectivity, IOT, Mobility, scalable computing & analytics is redefining industries. It is forcing their transformation beyond the traditional boundaries.

For the “WHAT”, changing customer buying behaviors are pushing enterprises to respond to stay ahead of competition. They are:

- Personalization – Unprecedented pursuit of innovation is leading to shrinking product life cycles & push for manufacturers to transition from a “Mass Manufacturing” to a “Mass Customization” approach
- Servitization – Consumers are demanding solutions rather than products, causing enterprise to look at building services around their area of core competencies

“Enterprise 360” & “Product 360” best described “HOW” enterprises are seeking to tide over these changing market dynamics to build close loop performances. The aim is to drive continuous optimization of products and services for the enterprise to maintain competitive advantage

The “Intelligent Industry” approach fosters synergies between the Digital and the Engineering worlds to help enterprises build intelligent products, operations and services at scale with digital inside everything, digital continuity throughout lifecycle and digital convergence within its ecosystem. This digitalization is allowing the sustainable businesses era.

The digital continuum comprises two key aspects:

- Product Life Cycle Integration – Digital continuity across Design–Build–Service provides invaluable insights about product performances
- Digital Convergence – Convergence of IT – OT technologies enabling immense visibility resulting into decision support or automated decisions, building a Smart, safe and sustainable manufacturing enterprise

Our graduates in this section are presenting their viewpoint about the reality of the “Intelligent industry” approach and how it will power the future of Industries. We at Capgemini are looking at contributing into the pursuit for enterprise excellence in driving competitive advantage and allowing our customers to build a smart safe and sustainable world



## Xinlin Li

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# The Perfect Match: how data sets the tone for new business models

*“if you torture the data long enough, it will confess to anything”* This widely disseminated quote comes from Ronald H. Coase, who won the Nobel Economics Prize in 1991. In fact, as a software engineer, I quite agree with the idea that numbers never lie. I believe that if we take advantage of them, for instance when we combine numbers - or rather data - with new business models, then we can create immense opportunities.

How new business models differentiate could be summarized in two aspects: making the customers' demand core and leveraging the Internet as the scaling platform. It offers great perspective for development of new ways of working, selling, and creating growth. We have a very vivid example here in China –The Didi Taxi. The birth of the Didi Taxi has changed the traditional taxi-hailing market and overturned the previous situation of people hailing and stopping cars at the roadside. Didi takes advantage of the Internet to draw a perfect Online-to-Offline closed loop which connects passengers and drivers. Didi's customer-centric policy focuses on optimizing passengers' experience to the maximum and allows drivers to “take orders” according to passengers' destination, which can save communication costs and time between drivers and passengers and reduce the empty-driving rate. Thus, Didi was very successful and became the new norm in this market.

We often hear that focusing on customers can lead to greater success for a company. But why? Customers produce data and data has a characteristic – predictability. In other words, if we have the right level of information on our customers, we can predict their potential preferences and needs. Simply make the data speak and turn the insights into smart, tailored, top-notch services. In return for the experience, customers will likely remain faithful to the service and even spread the word around and help you acquire new clients and prospects.

It's not hard to figure out how this works. There's a very classic example in our daily life. I believe all of my Chinese colleagues will be familiar with the Taobao App. The app has a quite impressive function called Image Search, which means users can upload a picture in the search engine to receive matching results from the marketplace. The system automatically extracts the color, shape, texture, and other

features from the image to establish a library of suggested results. It's another example of how capabilities around data (here in term of capacity to extract information from one point and find similarities with other existing separated points in the system) are a great way for companies to provide next-gen customer experience. The level of convenience achieved was unprecedented at the time and it's so easy now for users to search for commodities that are not easily described with words.

Now, beyond tailored services, data helps companies improve their products and their features. No need to guess anymore, just look at trends, clicks or surveys. At the end, this new era of data-powered enterprises also creates a new form of reliance around direct and indirect feedback systems.

However, data-crunching can sometimes be complex and we still need to strengthen our ability to manage risks associated with data screening. In the ocean of data produced daily, how do you find the small portion of information you've been looking for? How do you make sure you're not misled by an incomplete picture? And how do we, as customers, can get guarantees over what information we're sharing and how it's being used?

Overall, new business models are all going to be data-powered to some extent. This relationship is just like two ancient Chinese characters, Bo Ya and Zhong Ziqi – a story about a musician and a woodcutter which exemplifies a certain ideal of friendship, where “one truly appreciates the tune played by another”. There are still lot of capabilities and opportunities to discover and build around the data space, but I'm quite certain that, regardless of possible regulations, the frame out of which new disruptive businesses will emerge will have something to do with it.



## Shurti Thirunaukrarasu

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# Building Supply Chain Resilience with Data Analytics

*“Without big data analytics, companies are blind and deaf, wandering out into the web like a deer on a freeway” –*  
Geoffrey Moore, author and consultant. From a simple process of interpreting data to obtaining meaningful insights, analytics has become a core part of the CPR industry, especially during the pandemic.

With multiple lockdowns, disrupted flows of finished goods and raw materials, the pandemic has shed light on vulnerabilities of supply chains. A recent survey from the Capgemini Research Institute found that the CPR industry took a huge hit with 63% of consumer products companies and 71% of retailers saying it took at least 3 months for their supply chains to recover from disruptions arising from the pandemic.

The survey also revealed changing consumer needs coupled with logistics restrictions have presented at least 70% of CPR organizations with the challenge of end-to-end monitoring of the supply chain. While these entities scramble to find ways to cope with the pandemic, how can they build a better connected and resilient supply chain?

Analytics acts upon statistical algorithms and machine learning techniques, allowing businesses to eliminate bottlenecks and streamline processes. It provides greater efficiency, transparency, and adaptability for supply chains.

An example of a CPR corporation reaping benefits through the implementation of analytics is Amazon. Having evolved with the changing digital landscape, Amazon has managed to retain its spot as one of the top global heavyweight companies. According to The New York Times, its profits alone have increased nearly 200% in Q3 in 2020. How has a massive organization, delivering over 2.5 billion packages yearly, managed to optimize its supply chain?

Amazon utilizes machine learning to churn out demand forecast levels upon analyzing time series data and other variables that could affect demand levels. With its demand forecast feature, it communicates inventory demand to suppliers. This includes letting vendors know the likelihood

it will place an order for an indicated demand and the probability it will purchase more of that good.

The use of analytics has thus enabled Amazon to achieve better end to end supply chain visibility, demand planning, warehouse management and supply chain resilience.

Likewise, every other CPR company can streamline their supply chains from inventory management to end consumer delivery. Here are three key recommended areas corporations should focus on; demand forecasting, predictive pricing strategies and inventory management.

## Demand Forecasting

Demand changes are never linear and can be driven by various forces. If consumer demands are not met, customer retention rates are bound to plummet. Therefore, it is pivotal for organizations to effectively make use of various data points collected to forecast based on historical data and current trends. With better demand forecasting from accurate predictions, firms will be able to better meet consumer needs. More efficient reallocation of employees to work on other crucial areas could also be made possible as a result. This could even include developing the next innovative product.

## Predictive Pricing Strategies

While certain products might not be continuously in demand, firms can adjust prices to what the market can bear. This becomes a key strategy CPR companies should adopt to minimize excess inventory.

The implementation of dynamic pricing algorithm is not new to us. Take Uber for example. Having analyzed past data to understand time, distance, traffic and rider-to-driver demand patterns, Uber has used it to its advantage, for growth.

Predictive analytics can prescribe optimal price points that maximize revenue while creating personalized offerings due to a better understanding of consumer behavior. Price optimization derived from predictive analysis enables players within the CPR industry to maintain a competitive edge as a result.

## Inventory Management

A poor inventory management system can result in serious repercussions including insufficient or excess stocks, loss of profits and unhappy customers. With the implementation of sophisticated analytics models, organizations will be able to better understand inventory requirements. This translates to a better management of safety stock levels, fewer bottlenecks through better distribution and greater transparency on upstream and downstream issues.

Businesses that build upon these 3 key principles are bound to be more resilient than ever. With resiliency comes better visibility, agility and contingency planning. Therefore, while numerous forces are bound to affect supply chains, CPR firms should embrace analytics as a tool to scale greater heights.

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# Want a more reliable, secured, and efficient supply-chain? Invest in blockchain

The new industrial revolution fuelled by the advancements of technology present new challenges. Smart factories are becoming more interconnected and handling increasingly sensitive information. This provokes the question “How do we ensure the safety of our data?”

The security of data could be addressed with blockchain, which technology represents an advancement of the way information is recorded and held. Fundamentally, it is a digital ledger that provides a single, tamperproof version of truth through its technological composition. Additionally, blockchain’s distributed nature means that the ledger is held concurrently on multiple devices across a network.

For manufacturers, blockchain’s technology provides

1. Trust – The blockchain holds a single version of the truth that participants can trust as the network validates each transaction
2. Security – Through a combination of automated verification, cryptographic signatures, and decentralised storage
3. Automation – Network participants of a blockchain ledger may setup smart contracts to automate repetitive processes such as billing and shipping
4. Resilience – Since the database is distributed across multiple locations within the network, the blockchain will continue to function even if one part of the network fails

Supply chains are the foundation of all manufacturing businesses, which are capable of utilising blockchain’s distributed ledger structure to improve efficiency and aggregate value-exchange transactions. For smart factories, such technology could help build transparency throughout the supply chain process. The advantages it brings could help address multiple pain points such as:

- **Quality assurance**
- **Supply chain monitoring**
- **Asset tracking**
- **Materials origin**
- **Regulatory compliance**
- **Identity management**

By scaling supplier order accuracy, product quality, and track-and-traceability, manufacturers will be able to better hit delivery dates, enhance product quality and ultimately sell more while ensuring the security of data.

The enhancement of track and trace allows the easy yet secure exchange of data within complex supply chains.

The blockchain can offer an immutable, permanent digital record of materials or parts, which promotes end-to-end transparency and acts as a single source of truth. The need for trust amongst participants is eliminated due to the provided increase in accountability.

Protection of intellectual property remains a critical condition for companies in making the decision to produce in-house parts or procure them externally. In the unfortunate event of a patent dispute, the usage of blockchain can help prove that the parent company owns the IP via the use of its public-private key cryptography feature.

Providing full transparency and complete documentation of the quality of processes and products to customers is a very costly yet essential responsibility for organisations. Leveraging on blockchain to support quality control can enhance value for consumers. Automating quality checks that generate and write measurements directly to the blockchain can help eliminate the need for inbound quality control to verify checks that the supplier performs. In turn, the need for quality control audits by authorities could be reduced.

Machine controlled maintenance with shorter maintenance time is also possible with blockchain via automated service agreements. When facilitating outsourced maintenance, organisations can append the device’s installation documents and service agreements to the blockchain record, essentially creating a digital twin. The blockchain technology can facilitate the use of smart contracts, which are transaction-protocols pre-programmed to automatically execute if the terms of contract are met. Similarly, the blockchain record can be used by the in-house maintenance team to prove that quality maintenance has been carried out.

Many applications of the blockchain technology are still in their infancy or in development. However, its potential impact to the digitisation of traditional supply chains and the broader manufacturing sector is not to be understated. Companies that successfully identify opportunities for the utilisation of blockchain could clear hurdles that previously impeded the full-scale deployment of other next-generation technologies and innovative business models. Eventually, a new set of norms could be set as more factory operations require data sharing capabilities and collaboration between companies & machines within a complex network.

The merging of cyber and physical systems will be the next stage of modern manufacturing. The blockchain technology will remain a key pillar of change as the community embraces an increasingly interconnected distributed ecosystem that maintains trust and verifiable ownership. Blockchain’s ability to remove manual activities via automating processes through securing trust, transferring value and storing data, looks like a great opportunity to explore in the coming years.

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# If you want to build a smart factory, keep your focus on Cybersecurity

According to a report from Capgemini's Research Institute, smart factories could contribute up to US\$1.5 trillion to the global economy by 2023. Gone are the days of intensive manpower, as the manufacturing industry looks to maximize their profits. This is even more prevalent during the COVID-19 pandemic when factories were or are still forced to operate without their full workforce on-site.

Smart factories apply different combinations of modern technologies to create a hyperflexible, self-adapting manufacturing capability, while a traditional factory has zero or few interconnections and most processes are operated in silos. "Smart" then translates into connecting different processes, information streams and stakeholders in a streamlined fashion. Now, with more focus on leveraging digital technologies to boost productivity and efficiency, these smart factories are exposed to cybersecurity threats - a malicious act that seeks to damage data, steal data or disrupt digital life in general. An example is Norsk Hydro, which suffered a staggering loss of \$71 million after their operations were abruptly halted for days due to a cyberattack. In fact, 61% of manufacturers have experienced a cyberattack before.

As much as manufacturers would like to maximize value of their technological capabilities, they should strongly consider the need to protect their infrastructure to prevent financial and reputational damage. Therefore, they should implement an extensive strategy to ensure their cybersecurity is strengthened.

Smart factories should start with investing in best-in-class technology, products and services. Instead of going to the lowest cost option and easiest method, they should go for those that consistently update and patch their systems on a regular basis. There should be a dedicated team that understands the company's processes and resolves technical issues promptly without fail.

Maintaining consistent operational readiness is another important step. Smart factories should invest time and effort to conduct exercises and drills to test their systems' capabilities of detecting cyberattacks. Testing and retesting its systems at regular intervals is vital to detect vulnerabilities and resolve them immediately. A survey done by Capgemini Research Institute revealed less than half of manufacturers conduct security audits of their networks periodically, emphasizing the need to implement regular checks.

Educating and training employees is another vital step to ensure strong cybersecurity practice. Vulnerabilities in employee devices used to access networks was the top reason behind cyberattacks and data breaches, according to the same Capgemini Research's Institute survey. Companies need to formulate clear and regular training plans to educate their employees to use technological devices in a safe environment and prevent any exposure to cyberattacks. Companies must emphasize the importance of restricted usage of devices within their networks. It can also be as harsh as implementing penalties on their employees to ensure compliance and mitigate complacency among them.

One may think that having such an extensive strategy will never be enough, and there are examples of well-established companies such as Renault-Nissan and Mondelez which still succumbed to cyberattacks. The evolving nature of cyberthreats creates a constant need for companies to remain alert and up to date with their own protection layers. Hence beyond "firewalls", they should also have a protocol in place to execute mitigation plan in case of successful attacks. This should cover all kinds of damage potentially incurred, whether we're talking about reputation, operations, or data leak.

All in all, smart factories have a lot to offer but also exposes the industry to new kind of threats for which, if unprepared, one can assume very significant damages. There are ways for companies to protect themselves, at least temporarily, and these should be considered across all existing organizational assets.

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# CUSTOMER EXPERIENCE



## Douglas Nicol

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The next 3 years are going to be a sort of Hunger Games for brands. Consumers will test them, judge them, and ask questions of them like never before. This goes beyond social media cancel culture to a more fundamental attribute that brands must excel at: delivering a better customer experience. As Gen Z and The Millennials are now the core of mainstream spending power your brand is being tested by people who demand better customer experiences and innovation from their preferred brand. Traditionally brands have been built around emotion, in fact without emotion brands would not exist, why else would some consumers pay \$5,000 for a Chanel handbag? Increasingly CMO's and CCO's are understanding the power of aligning brand expression with brand experience.

A great digital customer experience is not just about the efficiency of the experience but also how it makes you feel. As humans we are ruled by emotion, in fact 80% of decisions we make are based on emotion first. Sometimes brands forget this and create soulless digital customer experiences that miss the opportunity to emotionally engage with their customers. The era of emotion and creativity being close friends with customer experience has arrived.

This is not a nice to have but now a core competency for building your brand efficiently. In a world of media fragmentation and short attention spans, it's tougher than ever for a brand to make its mark. So set yourself the objective of creating brand building customer experiences that are both efficient and get talked about in a positive way. Include emotion-based metrics to judge if your customer experiences are delivering for brand salience, otherwise you are missing an opportunity to truly optimise.

The impressive customer experience papers from our Junior Talent sets out a wide agenda for customer experience including data and optimisation and even data needs to be thought about in human terms as in most cases data is nothing more than a description of a human being, their preferences, their dreams, their purchases, and their behaviours. The papers also dive into other perspectives on customer experience including diversity and inclusion, personalisation, and empowerment. Each takes an interesting and informative angle but all ladder back in some way to human emotion.

Let the Hunger Games begin, the brands that create customer experiences in human terms are the brands that will win.



## Amanda Hewage

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# Consumer advocacy is paving the way for change through an influencer led landscape

*Corporate social responsibility has traditionally been minimal in large organisations with little influence and advocacy. Over the past decade, organisations have radically adjusted to changes in consumer demands by implementing new customer experiences, aligning purpose and brand. Traditionally, consumers had little control, influence, and impact in the brand journey. The consumer ecosystem is fluid and requires organisations to pivot their core offering to support consumer demands and expectations. Although this is exhausting, brand identity is the result of powerful conscious consumers, leading organisations to adopt new depths of inclusion, sustainability, global reach, and awareness.*

The digital world has empowered consumers through awareness, leveraging their relationship with brands. This ties in with the influencer led landscape which has taken over the market due to an abundance of information across different platforms. As decision making on products and services have become crowdsourced, conscious consumers who look beyond the product and label, have created a transparent brand environment. Consumers are continuing to opt out of ads with the installation of ad blockers and upgrading to premium accounts. Despite this, consumers personalise their own content and targeted advertising by following different influencers through social media platforms. An influencer led landscape promotes a customer first strategy. This for instance, is adopted by online retail marketplace ASOS which consider influencers as brand ambassadors. The online retail platform has a diverse selection of ambassadors who cater for different demographics of people. Rather than invest purely on ads and other marketing techniques, ASOS have invested in a culture of diversity and inclusion, allowing their consumers to select which ambassador is most appropriate for their style, and selecting who advertises to them.

Direct to consumer strategies allow organisations to pursue a close relationship with their customers whilst opening the opportunity for an abundance of freely available data which would not otherwise be available. Opportunities have also been created by brands collaborating with the community, creating a two-way relationship to reach the consumers through an influencer led landscape. As the target audiences grow larger, brands can continue to keep an

intimate relationship with multiple groups of demographics by taking the same approach as ASOS and their brand ambassadors who promote and empower diversity. This strategy empowers global reach and promotes diversity in their market while continuing to enable a close relationship with different audiences.

Brand purpose and strategy has started to revolve around inclusivity and diversity to deliver products to different assortments of individuals. Brands and labels are increasingly adopting inclusivity and brand purpose as a strategy, and these organisations are focusing on more than just corporate social responsibility and sustainability. There are many implementations of diversity and inclusion, whether it be products, brand ambassadors, culture, or image, to encourage embracing and accepting. Many changes are occurring in the beauty industry which is acknowledging the need for better servicing multiplicity of clients, rather than promoting traditionally conventional beauty standards. The messages being derived from an influencer led landscape has enhanced awareness through brands such as Fenty Beauty by Rihanna. Rihanna's brand launched 40 shades of foundation, increased to 50 shades which has enabled men and women to finally match a shade to their skin tone. This empowerment has forced other brands to follow suite and created a rich culture of acceptance and standards. The power of global reach in this instance promotes awareness, very different to when I had my first experience trying to match a foundation to my deep coloured skin tone. The power of the influencer led landscape, embraced with community standards of inclusion and diversity, have undeniably pivoted brand offerings through an influential lens.

With digitalisation empowering consumers to demand transparency and advocacy surrounding inclusion, sustainability, and diversity, it has created a great world of wonder and hope. The relationship between the brand, influencers and their consumers are driven through different strategies which benefit all stakeholders, yet the real power is the change these relationships force. Evidently, adopting sustainable and inclusive behaviour makes our society and other organisations apt to make positive changes, changes which should have been there in the first place.



## Cameron Scully

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# How are consumers becoming part of the world's biggest R&D experiment?

Creating or improving products and services is a critical exercise for any business wanting to stay competitive. Especially for companies in technology and pharmaceuticals, having the newest and best offer could mean a huge gain in market share. Blackberry and Nokia were quickly overtaken by smartphone manufactures largely because of their failure to adopt touchscreen technologies fast enough. For this reason, companies such as Amazon, Alphabet, and Samsung pour billions of dollars into research and development every year.

As computational power explodes and learning algorithms advance, data becomes a valuable resource, driving research and development. This creates another race for the edge over the competition: ownership and discovery of data. Some companies are lucky to have the scale and technology needed to collect this data. Facebook can collect browsing history, location, relationships, and a spectrum of information from billions of consumers. While this data is coming directly from the consumer it is consented to as the price of using Facebook's free services. Additionally, there is ongoing data collection that most users might not ever notice. If two people spend a day browsing the internet it is unlikely that they will have the same experience – even browsing the same sites.

From the colour of your search engine to the prices of your airplane tickets, everything could be different. Companies will infinitesimally permute users' experiences and attach performance metrics to those adjustments such as average revenue per user, click-through rate, transactions per paying user, or the number of each product purchased. The more successful a permutation of features, the more users it gets displayed to, making internet consumers part of the world's biggest experiment. This process is known as A/B testing and

was first started during the advertising of medical products in the 20th century and then mass adopted in recent years. Microsoft was able to increase product revenue by 12% in just hours by implementing A/B testing and A/B testing was a key part of Barack Obama's political campaigns.

These are examples of how consumers are increasingly the most valuable part of a company's product. In the 21st century, there has been a steady progression towards meeting the consumer's needs rather than trying to convince the consumer they want what you have. Traveling salesmen and door-to-door beauty businesses quickly translated to picking up trends and mass marketing to whoever the algorithm predicts is most likely to want the goods. This resurfaces the issue of data ownership. As a user, you have no say in which test you receive or whose algorithms you appear in. This is due to the increasing value of data, consumer rights and privacy are being traded for increased revenue performance.

The initial inception of A/B approach, in advertising medical products, links back to the testing of medical products. Similarly to advertising, different variations of medicine can be given to different patients. Half of the patients may be given version one of a drug and the other half version two. In this scenario, there are more clear moral issues in subjecting some patients to potentially dangerous or less successful drugs. Ownership of your body should mean you get to choose what goes in it. This raises the question of who owns your digital identity?

A machine that is shown thousands of paintings, labelled as good or bad, may learn the difference and in turn evaluate its own painting. This very principle, in machine learning, resulted in a computer painting that one could call a masterpiece. Although original and completely dissimilar to the input artworks this painting is truly just an output of other people's work. The computer can't own its work, and the programmers responsible for the algorithm don't own the work either. Similarly, A/B testing your customers and mining consumer data is a fine line between generating new and entrepreneurial products and just reselling your customer's identity.

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## Jacqueline Tan

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## How should brands keep up with the rat race?

Have you wondered why you pick up a particular brand from the rack over another knowing that the products are made with similar ingredients? It boils down to the sense of belonging and association with the brand. In the past, consumers could be choosing products solely based on how reputable the brand sounds, while being oblivious to the other aspects of the supply chain management of the brand. With omnichannel marketing, consumers now are bombarded with information from different platforms, allowing them to make more informed decisions. They become more conscious of what's behind the work of a brand and determine whether to give in their support.

Consumers no longer blindly follow how renowned the brand is but how the brand behaves. For instance, the Body Shop had an 11-year long episode of being boycotted starting 2006 when it was associated with animal testing cruelty issue. The brand gradually picked up its revenue after it changed its parent company and announced a cruelty-free policy. This showcases an example of how impactful a brand's purpose can affect consumer experience towards the brand.

Just like modern day dating, there is a shift in the consumer landscape. When comparing across different generations, millennials and Gen Z are more expressive on social media than Gen X and Baby Boomers. With omnichannel marketing, Millennials and Gen Z receive contents through multiple platforms and become pickier. They want brands with multi-faceted purposes that align with their values. When an individual wears an item from a particular brand, they want to be seen to be associated with the brand that portrays positive societal impact and avoid brands with negative connotations. A report from Global Web Index conducted in 2019 on the United States and United Kingdom online consumers stated that 84% of them were inclined to boycott a brand for its poor environmental record and 82% for its poor human rights record.

So what exactly are modern consumers looking for in a brand? Consumers want brands that reflect the same values that they hold onto such as promoting family values, mental wellbeing and environmental sustainability. To put this in perspective, brands such as Unilever and Lululemon are successful because they have aligned their purposes with their customer base to foster deep connections and a strong network.

With that being said, brands should not just follow what their competitors are doing. They should reflect on whether their stated purpose has a clearly defined message of who the brand is, the motivation behind the creation of the brand and transparent execution of what the brand has targeted to deliver to its audience. Consumers are looking for consistency in a brand that would continue to deliver what they promised. When there is a misalignment, the brand will begin to lose its customer loyalty and base.

So how can brands adapt and realign their purposes to improve customer experience? Companies will first need to realize the need for initiating a business transformation process. They can build on insights-driven capability to gain in-depth analysis and study consumer behavior in the market. For instance, they can tap into social listening tools and data analytics tools to deep dive into consumers' conversations on social media and Google keyword search data on what they are saying about the brand and what improvements they hope to see in the brand. Easier said than done, having different data points from different sources can be overwhelming. Hence, companies will need to first reflect on what areas require improvement, then look into the relevant sets of data for insights. Thereafter, turning the insights into actionable targets to tackle. This will allow brands to continue to stay relevant as well as plausibly expand their customer base and tap into a new market.

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# The future of banking: Virtual Banks

Digital transformation has always been a challenge for the banking industry. In the past decade, different financial institutions have tried to enhance their capabilities in leveraging the technology for customers, while limited effects could be found in the traditional banking model. With no hesitations, COVID-19 has accelerated the development of CX-oriented banking technology, especially with Virtual banks.

Virtual Banks are acting as a pioneer among the banks, while they only focus on providing services via digital channels. Like traditional banks, virtual banks offer retail banking services under the local banking regulations. Yet, with no physical channels, they can retain a lower operational cost and provide a better return to customers. Because they are not tied up by legacy, easier adoption on the cutting-edge innovations like Cloud and Open Banking can be made, and hence leads to a better engagement with customers.

### Account opening via Digital

Without a doubt, the ongoing pandemic situation has created a challenge to the current retail banking system. The past practice in retail banking, which focuses on offering financial services for their individual consumers, would only provide onsite services in their local branches. If the consumers would like to open their bank accounts, they might have to initiate their banking journey in the local branches. A report from Visa has shown that only 60% of the customers were satisfied with their user experience. The frustration during the journey is that those branches had a low turnover while potential consumers might have to spend a long time waiting and procession documents.

Virtual banks offer an alternative for the ease of processing, by migrating technology such as AI facial recognition and multi-factor authentications. Ideally, inbound customers who are interested in getting virtual bank accounts would only require 5 minutes to fully enroll. For instance, with ZA bank in Hong Kong, customers can open their accounts with their mobile device, their identity card on hand and complete the set-up with a snap. The flexibility here has solved one of the major pain points among the industry.

### Personalized products and services

Financial banking products require complexed product designs and compliance rule configurations by the traditional retail banking. Yet, the era of digitalization has raised the customer's expectations of the banking service, including higher digital capabilities articulated around a customer-centric strategy. Leveraging the technology and advantage of a lower cost, Virtual banks can explore and understand the customer to build a better customization.

In fact, explosion of data has made it easier for everyone to access and understand financial markets. Individual customers may ask for even more self-service and product personalization. Taking a step further, virtual banks do not only provide self-specification, but also response to the request of information access.

A report from PWC which surveyed ~1500 people in Malaysia, Hong Kong and Singapore states that more than 60% of the participants were interested in financial education offered by the bank and access to the market reports as to create their own financial plan. The report also interestingly exposes how habits, culture and context can also influence adoption of new services, where for instance people surveyed in Hong Kong are leading in term of "trusting virtual banks for keeping their data secured" (38%) but only 47% of them said they would actually "share their data as long as I'm confident the data is secured" against 64% in Malaysia or 55% in Singapore.

### Virtual Banking development

Although the adoption of Virtual banking is still only in progress, it is likely pushing the new norm in Banking. We might not even notice the difference between traditional and virtual retail banks at some point if most if not all our interactions leverage the same digital channels, and this even more if "customer-centric" becomes the main strategy surrounding banking products release. We may have to admit that there are still concerns among the public, especially around data security. But risks always come with opportunities. It is like our mobile devices in 2009 and remote working development in 2020 – popularity and awareness will drive higher adoption and confidence.

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# CLOUD



## Edouard Laroche-Joubert

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### A successful move to cloud needs to look at the big picture

A cloud transformation project must be balanced and driven by the different strategic intents. The idea of cloud differs between the stakeholders. Some will be driven by digital transformation or data, some by innovation or services development while others look for better SLAs or cost optimisation. A successful adoption of the cloud needs to follow three main principles.

First, **a strong meaning to the transformation.** It needs to bring solutions to business challenges like :

- Developing new applications faster by leveraging technological innovations
- Increasing the market share with a digital approach or use public cloud capabilities for geographic expansion
- Take advantage of cloud infrastructure and increase resiliency
- Simplify and standardise the IT landscape, reduce maintenance
- Increase financial efficiency using cloud variability and automation capabilities

A common mistake in migration projects is to consider only one of these aspects.

The success of a cloud project depends on a global vision, involving both adoption by the business and the exploitation of all the economic levers of transformation.

Second, **a broad and multidisciplinary understanding of the cloud** allows transformation choices to be aligned to a main vision, without neglecting other aspects. If digital transformation is the priority, the emphasis will be on the adoption of cloud-native services and containerisation. But if a very financial angle is privileged, infrastructure consolidation roadmaps can be accelerated.

The chosen approach will need to adjust between speed and transformation:

- Adoption of cloud native innovations and reversibility effort
- Speed versus depth of transformation of the application portfolio
- Openness to an ecosystem and control of trust and sovereignty
- Investment and horizon of the return of investment in the transformation.

Third, a successful cloud migration requires a cultural transformation and the adoption of modern methods. To gain the cloud benefits on the operational agility, innovation and efficiency, the transformation needs to embrace the organisation, the processes, methods and culture.

New models lead to:

- New platforms and new consumption models, bringing new applications from the business teams
- A new culture of IT and security operations management based on a product, agile, DevSecOps approaches
- A systematic automation approach with new skills

A cloud transformation involves the entire organisation for our customers



## Hai Qi Loon

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# Cloud Computing: A Step Towards Net-Zero

Rising sea levels, melting glaciers, increased wildfires, heat waves – these are some of the climate nightmares that the World is experiencing. In this data-driven economy, companies are powered by data and data is the foundation of decision making. While data undoubtedly brings convenience to our lives, the associated amount of carbon footprints produced are destroying our planet. Let us take AI as an example, where AI works by combining large sets of data to extract insights and patterns. Did you know that up to 78,000 pounds of carbons can be generated just by building and training an AI language system? This is twice as much as the average American exhales over their lifetime! Be it on an individual or organizational level, many have embarked on their green journey. “Net-zero by 2030” and “Net-zero by 2050” are not uncommon headlines as many organizations set the ambition to achieve zero carbon emissions in the coming years.

Cloud computing has always been a hot topic. Being able to run businesses without the need to invest in physical hardware, the ability to market products faster with cloud deployment and the convenience of accessing cloud services anytime and anywhere with just an internet connection are some of the cloud benefits that many are aware of. However, cloud computing can also help companies reduce their carbon footprints and perhaps, achieve a step closer to net-zero. According to IDC, cloud computing could eliminate more than 1 billion metric tons of carbon emission from 2021 to 2024. This is equivalent to the total emission of 218 million cars over an entire year!

The pay-as-you-go pricing model in cloud allows companies to only utilize what they need based on their operational demands. Users are provided with the flexibility to switch resources on/off when needed. While many see it as an ability to save costs, this pricing model saves a significant amount of energy through resource optimization and not running underutilized or as idle servers. In addition, cloud providers operate using virtualization design, which means multiple

operating system copies can run simultaneously on a single server. This allows fewer servers to be powered, hence less energy consumed. Furthermore, some cloud providers have embarked on their green cloud journey to ensure their data centres are carbon-free. For instance, Google has reached carbon-neutral in 2007 and aims to run all its data centres on carbon-free energy by 2030. Amazon is committed to powering its operations with 100% renewable energy by 2025 and is on the path to net-zero carbon emissions by 2040, and Microsoft has set the goal to be carbon negative by 2030 and remove their historical carbon emissions by 2025. Companies can leverage on cloud provider’s net-zero carbon IT services and data centres operations to reduce their carbon emissions.

With the cloud, not only do companies benefit from reduced operational expenses, but it also allows them to work towards sustainability. However, this is not a one size fits all solution. Simply migrating or starting businesses using the cloud does not imply that a company is closer to net-zero. There are other factors to consider too.

Firstly, cloud optimization. The reduced operating cost that one enjoys in the cloud usually comes from the direct reduction in server usage, hence, lower associated carbon emission. While cloud provides the flexibility to add on more servers when required, companies must ensure that proper cloud architecture design and planning are in place to optimize resources, where servers are added only when required. Poor cloud architecture can risk companies having expensive cloud consumption and inefficient cloud usage. Companies must be committed to reviewing and optimizing their cloud architecture as they scale and expand their operations.

Another factor is the selection of cloud providers. Depending on the green commitments of different cloud providers, the governance and investment approach towards sustainability varies. Companies must thus consider the sustainability commitment of various cloud providers before starting or migrating their businesses to the cloud. It is highly advisable to choose one that has the ambition to achieve carbon-neutral or carbon-negative and that best aligns with their sustainability goals.

The impending climate crisis is not a new topic. Organizations have a big part to play in reducing carbon emissions. Adopting cloud computing and ensuring corporate sustainability will not be an easy task. However, with careful implementations and analysis, green cloud computing is something companies can consider in their sustainability movement to achieve lower carbon emissions in this digitalized world, and subsequently, towards net-zero carbon emissions.

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# Why Japanese P&C Insurers are Slow to Change, and How Cloud Migration can be the Solution

Marika, Yumika, Hideki and Shogo come together to discuss the state of the Japanese property and casualty (P&C) insurance industry.



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FS Insurance Practice  
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## The evolving landscape of the P&C insurance industry

### Marika Nakagoe

Today, we have gathered to talk about the Japanese P&C insurance industry, which is a growing business sector with almost 8.7 trillion yen of net premiums written in 2020 and is also a core practice here at Capgemini Japan.

As we are aware, the landscape of this industry is rapidly evolving at a global level due to newly emerging trends and the risks they pose. In the World Insurance Report 2019, our company identified five broad macro trends which are exposing humans to new risks, pressuring insurers to challenge the status quo: disruptive environmental

patterns, technological advancements, evolving social and demographic trends, new medical and health concerns, and changing business environment.

The Japanese P&C insurance industry is no exception, with shifts such as super aging population and declining car ownership. Insurers must be attentive and agile to keep up with consumer needs at the right time. However, looking at the composition of net premiums according to product category, Japanese P&C insurers don't seem to be adapting to the presence of emerging risks and demands in the market. For example, automobile-related offerings still account for 60% of the net premiums written, whereas new offerings which include products for newly emerging risks account for only 15% - there's not much of a change from past decade. The question is, why are Japanese insurers slow to change?



**Disruptive environmental patterns**  
Increasing frequency and severity of natural disaster, etc.



**Technological advancements**  
AI, connected devices, nanotechnologies, etc.



**Evolving social and demographic trends**  
Growing inequality, shift in demographics (e.g., the silver tsunami and in increasingly tech-savvy population)



**Changing business environment**  
Increasing protectionism, emergence of tech-based firms and new business models



**New medical and health concerns**  
Rising healthcare costs, increasing resistance to antibiotics, escalating lifestyle-related issues

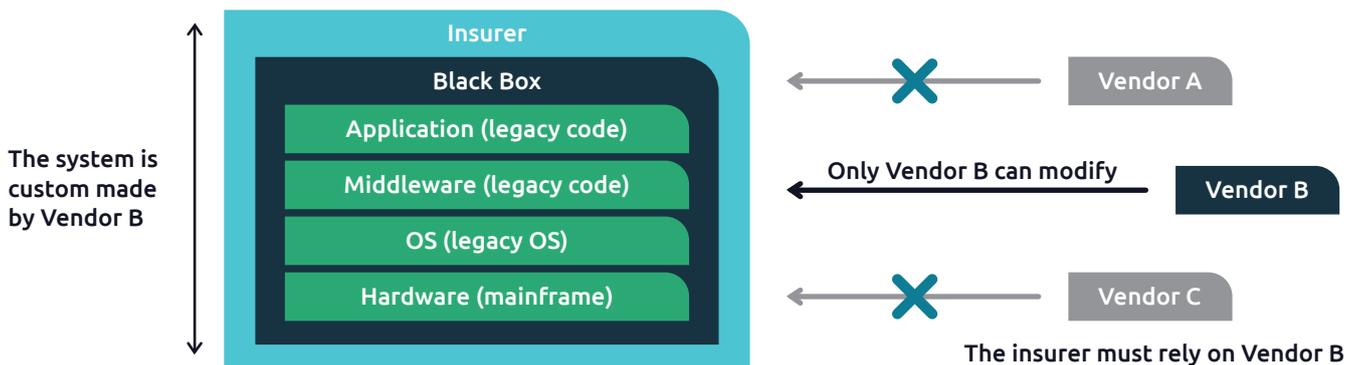
## Legacy systems as the major barrier

### Yumika Suzuki

I think I have the answer to that, Marika. I agree that Japanese insurers are falling behind when it comes to adaptability, especially compared to their global peers in, say, the US. This is due to numerous barriers; however, the most influential one is the legacy system used by the insurers.

Many Japanese P&C insurers still rely on their outdated computer systems referred to as “legacy systems” which were built on mainframes in the 1980s to operate their businesses. They could not renew their systems earlier since they were busy dealing with decade-long accusations by the Financial Service Agency for their unlawful unpaid benefits from 2006.

Legacy systems negatively affect the agility of insurers in three ways. First, their gigantic and complex structure require millions of lines of codes, hence months or years, to execute something new. Next, the applications in the systems are written in legacy mainframe languages such as COBOL - not only they are incompatible with other languages, but there is also a severe shortage of mainframe language programmers since the community is at retirement age. Finally, legacy systems suffer from vendor lock-in, where system support can only be provided from a particular vendor. Inside a legacy system, all the components from the hardware to the application are usually custom made by a particular vendor. This vendor lock-in shuts out external help and gives the vendor a huge bargaining power. Basically, Japanese P&C insurers are stuck because of their legacy systems which require a huge amount of cost, in terms of both time and money.

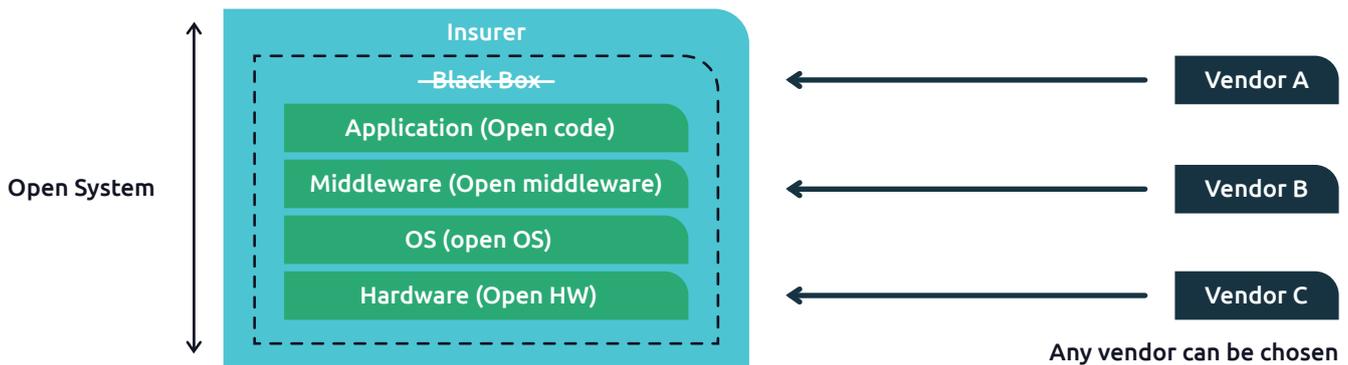


## Time for legacy system modernization

### Hideki Takahashi

That’s a great point. There is only one way out of the current situation: legacy system modernization. By using a new system compatible with every company and every developer instead of a specific vendor, insurers will have multiple vendor choices and will benefit from function extensibility, easier access to resources, and optimized price.

There are various options and combinations when modernizing to open systems. For example, when changing the hardware, the choice will be either to use a standard product on premise, or to migrate the digital/IT assets into the Cloud. Then they can replace the OS to the standard Windows or Linux. As for the application, insurers can develop one from scratch, or use third-party packages; here, it will be important to replace the incompatible legacy language with a standard language like Java. Insurers must evaluate factors such as cost, effect, and value in order to choose the right modernization approach.



## Cloud migration is the solution

### Marika Nakagoe

I see. Considering the market characteristics of the Japanese P&C insurance industry, I believe we can state that Cloud migration is the best modernization approach. The top priority for them now is to keep scaling their business by improving their agility and flexibility. However, they cannot afford a prohibitively high expense since they are already paying a large maintenance fee for their current legacy systems, not to mention that 90% of insurers are small and medium-sized businesses.

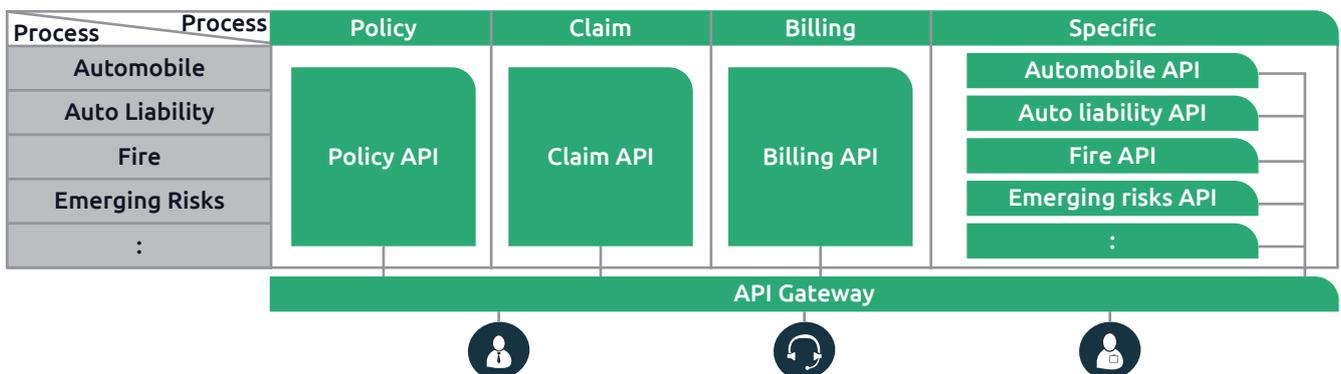
Cloud migration fulfills all requirements. The first prominent feature of the Cloud is scalability, which is the ability to easily add or subtract services as needed without impacting performance. Next, Cloud-native applications support practices such as microservices that allows companies to release incremental changes frequently, leading to market responsiveness. I think I will leave the explanation of microservices to Shogo since he is familiar with the field. Last but not least, there's no question that Cloud is budget friendly. Cloud computing is 100% variable costs; investment in onsite hardware and infrastructure is unnecessary, and users are charged in a subscription-based pricing model.

### Shogo Makino

Cloud migration is indeed an imperative. Speaking of microservices, this type of architecture is highly suitable for P&C insurers who have or aim to have a variety of workflows and offerings.

The modules are communicated over APIs (Application Programming Interface: an interface that defines interactions between multiple applications) and managed using the API gateway. The components can be built, deployed, and tested flexibly and independently when executing something like product development. Therefore, faster iteration cycles are achieved, resulting in efficiency. In contrast, operating without microservices would mean that alteration in one function requires alterations of all functions, which is costly.

The microservices model is an architectural approach to creating cloud applications, separating insurance functions such as policy, claim and billing, into individual modules.



## Conclusion

### Hideki Takahashi

I think we are ready for a wrap up. To summarize the story, legacy systems are preventing Japanese P&C insurers from being up to date; thus, system modernization is a high priority. By opening the system, the choices of vendors that

support the system will expand and agility such as time to market for new products will be enhanced. Among the means of opening systems, Cloud migration is essential if insurers want to exploit further growth in the modern era.

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# EMERGING TECH



## Kefeng Pan

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Emerging technologies always create excitement in the market. They bring together new stories, money, talents, and all kinds of resources into the exploration of new possibilities. However, there's always a question around where emerging tech should be applied to generate real and sustainable value as well as the expected return of investment.

History has shown us its fair share of both business success and failure. Imagine a time before 2007, when touch screens were still a niche despite becoming so widely used after, and this thanks to the experience design brought by Apple's iPhones. Elsewhere in the high-tech sector, many new VR concepts faded away despite attracting generous investments, primarily because of their inability to create the right experience for consumers. Not to say that experience is the only success factor of an emerging tech, but it is surely a critical one, and the right experience is always human-centric.

In our time, as emerging technologies give birth to new scenarios, these in turn drive other technologies forward, in an accelerated and reciprocal influence. When we review the innovation, implementation, and positive or negative influences of emerging technologies, we capture

an ever-lasting core message, that is, we must put human-centricity as a guideline for technology development, application, and regulation.

How could the future be with new technologies that meet human needs for safety, healthcare, convenience or even emotional and social interactions? How should and would we regulate emerging technologies and make sure that they're aligned with what we define as ethical? Only by approaching these questions with a human-centric perspective. This is the way we will truly help our clients and society achieve sustainable successes with mitigated risks.

Our junior talents gave us some perspectives on interesting topics related to emerging technologies, such as the application of AI in the healthcare industry, the development of neuromarketing, and the ethical issues in autonomous driving. The articles share thoughts on how technology could better understand and serve humans, and how to deal with moral dilemmas in the process of technology applications, which should inspire us to reflect on the profound relationship between technology and humanity.



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# Why wait? The future of health is here.

*To reach a future state, we must relentlessly adapt to break through the barriers that impede innovation. This is inherently achieved through the process of failure and reiteration, which illuminates the correct path ahead. In biomedical research, failure is often an expensive inhibitor in terms of time and money. However, in a world that is filled to the brim with data, we can leverage new technological tools to accelerate our journey towards the future of health.*

## From Bench to Business

The heart and soul of biomedical research lies at the lab bench, where the ritual of experimentation occurs. Here, ideas are tested, observed, failed and reborn into the next idea, until a breakthrough is achieved. Artificial intelligence (AI) and machine learning algorithms are now being adopted into the research and development (R&D) pipeline to derive data trends from complex experiments. This provides researchers with an expedited and data-driven R&D strategy and ultimately, ameliorating the time and cost associated with translating biomedical research to a commercialised result.

Traditionally, it takes billions of dollars and years of research to discover a drug candidate for commercialisation. Approximately only 1 in 10 of these candidates are then suitable for further development into a commercial product, highlighting the necessity of trial and error in this phase<sup>1</sup>. The initial search for these potential candidates uses complex experiments which create extremely large datasets.

Recent AI applications have sought to train a machine learning models with these large data sets. One such Capgemini project, in partnership with a large global pharmaceutical company, applied a machine learning algorithm to create an AI-augmented drug discovery process. This project used a language translation algorithm to predict the molecular structure the candidate would require for its desired biological activity. This application enhanced R&D throughput and facilitated an outcome whilst mitigating the costs of further experimental failure.

The necessity of an accelerated R&D pipeline has certainly been brought to the forefront of attention in response to the global pandemic. Pharmaceutical organisations will now seek to cement AI into the design of their operating model to ensure they remain competitive in a world of personalised and accelerated medicine development.

## From Business to Bedside

The final and most important aspect of any research pipeline is the clinical trial. While failure in the R&D phase is accepted as inevitable, here the opposite is true. This is the space in which accuracy, transparency and accessibility are crucial in the provision of healthcare. Hence, it fits naturally that alongside the defined processes involved, AI facilitates an important role in the governance and delivery of clinical trials.

Historically, the duty of providing patient-centric care rested with primary care providers. With the advent of new technological tools from large technology organisations, such as Google and Amazon entering in the healthcare landscape, patients are now empowered through access to personalised data-driven health insights facilitated by AI implementation. This increase in patient involvement benefits the healthcare eco-system through higher rates of participant retention and adherence to study requirements during clinical trials, stemming from an enhanced participant experience.

Behind the scenes, AI can be unleashed on trial data to improve data quality to providers. Implementing AI can ensure governance of patient data is compliant with regulatory requirements. Importantly, the time that would be spent monitoring the processes and parameters effecting data capture can be re-invested to focus efforts on providing patient-centred care and an improved participant experience.

## What's next?

A recent survey of 54 major global healthcare organisations has revealed that the healthcare industry is in its infancy when it comes to AI. Currently, most of these organisations apply AI to improve patient-centric care, manage risk and reduce costs. The primary concerns which persist are the ethical considerations of AI's role in the healthcare eco-system. The same survey uncovered that less than half of these organisations had a defined AI and ethics framework, while two-thirds had no defined ethics governance framework for AI. What stands true is that the hype of theoretically implementing AI in healthcare has passed. It's already here. Now is the time for us to lay the foundations for how we will sustainably use AI and exponentially drive the future of our global healthcare economy.

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# Do Autonomous Vehicles produce pre-calculated casualties? A discussion on the ethics of PII based decision making.

Autonomous Vehicles (AV) development presents an array of possibilities in the way of increased road safety and efficiency. With it, the technology offers an equal variety of challenges linked to ethical concerns.

The development of AV's presents a reality in which pre-determined algorithms can make decisions that omit human interference. This omission breaks the causal link between humans and potential damages committed by machines. What impact does this then have on the scope of liability in the case of violating human rights or data security? More importantly, how do AVs decide who, if any, succumbs to the fate of a casualty?

'The Trolley Problem' has been related to many real-world scenarios, recently finding a place among discussions of AV's. The 'Trolley Problem' poses the dilemma of a train that is approaching two paths. Path A with one person on the road, path B with three people on the road, based on varying priorities, which path results in casualties? Applied to the ethics of AV's, the dilemma refers to the possibility that if an AV were to crash, who dies? The general scenario posed is as follows:

*An AV drives along a road at high speed. In front of the vehicle, a group of people suddenly block the street. The vehicle is too fast to stop before it reaches the group. If the vehicle does not react, the whole group will be immediately killed. However, the vehicle could evade the group entirely by entering the pedestrian way, consequently killing a previously uninvolved person. The following variations have been proposed: (A)*

*Replacing the pedestrian with a concrete wall, killing the passenger of the AV. (B) Varying the personas of people in the group, the pedestrian or the passenger. The use of personas allows for an emotional perspective, e.g., stating that the single pedestrian is a child, a relative, elderly, sick, or a convicted criminal.*

Although seemingly far-fetched, the relevance of such comes about as these decisions, unlike human choices, will come pre-calculated months or years before the accident in question, as they must be pre-programmed into the algorithm.

Despite AV's sitting as one of the main applications of AI, the technology has not yet evolved to a stage where the vehicle holds total consciousness. The relevance of this again is bolstered in the fact that all decisions, AI based or not, are founded on human intelligence. As such, the outcome of an AV's dates back to the decision of the programmers, policymakers, and the like.

Keep in mind the intrinsic unfairness of the trolley problem, i.e., suggesting that different people's lives hold varying values. Possible solutions to the trolley problem among AV discussions indicate that AV's will take into account individuals' personal records, as well as age and social status. Intending to not only trace and recognise individuals but associate a value.

Considering privacy laws and historical proceedings of similar territory, i.e., Australia's 'My Health Record', the possibility of such seems highly unlikely. Over 2.5 million Australians opted out of Australia's digital health records due to privacy concerns. While equating to only 10% of Australia's population, does this not pose a predictive guide on whether Australians and others globally would accept data tracing at this level?

Whilst clear that the debate on the ethics of AI and AV's leaves much to be discussed, the presence of semi-AVs on our roads at present have set the tone for the future of travel. Autonomous technology can assist in decreasing accidents and road traffic by up to 90%; however, as discussions unfold, challenges remain.

I encourage you as a reader to see how you would decide if the decision were up to you. Moral Machine is a platform where you can decide the lesser of two evils. On this platform, you can enter your vote per scenario and review the votes of previous participants. In the end, the scope of liability remains uncertain, serving as an ultimate barrier to the future of totally autonomous vehicles.

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# Why do companies want to read your mind?

In 1985, Coca-Cola was involved in one of the biggest marketing blunders that nearly made them bankrupt. Coke decided to reinvent its drink modifying its taste to gain market share over their rival Pepsi. \$4million in development and 200,000 taste tests later, they introduced 'new' Coke in the US and some international markets - only to be met by a backlash from consumers and media. Within 80 days, 'new' Coke was pulled off the shelves with heavy losses and a damaged brand image.

Where did Coke go wrong? To investigate, let us look at an experiment conducted using fMRI brain scans in a lab to test consumer reactions to Coke and Pepsi. It was observed that consumers had dramatically different neural responses to a blind taste test, compared to when they knew what they were drinking. Coke subconsciously evoked an emotional experience for consumers that went far beyond its taste.

How can companies effectively involve consumers in their decisions to avoid pitfalls like this? Neuromarketing is the answer.

Neuromarketing is the combination of neuroscience and marketing. It aims to understand consumers' motivations by measuring their physiological and neurological signals. This includes tools that measure brain activity, brain flow, skin, heart rate, eye stimuli and more.

## Why neuromarketing?

For many years, traditional marketing involved either asking consumers what they wanted - through interviews, surveys and focus groups, or measuring quantitative trends in sales. While these methods are useful, they aren't enough in this increasingly competitive market.

Around 95% of consumers' decisions are made subconsciously. This makes tracking consumer intentions challenging as bias and preferences are subjective, resulting in a mismatch between qualitative and quantitative findings.

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Hence marketers started giving importance to underlying consumer behaviours and attitudes. Neuromarketing helps provide objective and unbiased results on how consumers think. Combined with traditional marketing, it helps businesses harness impactful insights that aren't directly visible or obvious.

The Coke case study is just one example of neuromarketing. Here are a few others:

- Google used neuromarketing to revolutionise SEO (Search Engine Optimization) and define quality content standards. The top search results generate the most clicks due to engaging the part of our brain that makes decisions – a win-win for Google and its consumers.
- Paypal used an Electroencephalogram (EEG) to analyse brain signals and discovered that consumers found convenience and speed more appealing than reliability and security. Using this insight, they completely pivoted their marketing focus.
- Neuromarketing research can be predictive too. A study found that specific patterns of facial expressions can predict the popularity of YouTube videos.

## Adoption

Neuromarketing uses a range of technologies to cater to different business needs and budget. Large companies like Microsoft, Google and Facebook have in-house neuro-capability units, but this isn't feasible for smaller businesses due to high initial cost, specialised equipment and skill shortage. In a survey from 64 neuromarketing firms, only 31% reported using fMRI machines.

However, neuromarketers have been quick to embrace less costly tools like eye tracking and facial coding. Companies can also partner with specialist neuromarketing consulting firms, indicating higher adoption in the future.

## The ethical challenge

The case for neuromarketing adoption is strong. But like any emerging technology we need to ask – how far should this go? Will its development do more harm than good? In 2016, Cambridge Analytica used neuromarketing to send political advertisements to target groups of people. This was shown to manipulate people's thoughts and ultimately impact the voting process. Is this ethical?

Due to advancements in neuromarketing, it is now possible to record a person's actual mental and emotional reactions without interference. There is immense growth potential due to proven benefits for companies. The big question – will it benefit consumers as much in the long term? Will we be able to use it solely to understand consumer needs, not to entice them to buy things they don't need?



# NEW WAYS OF WORKING



**Susan Beeston**

EVP & Managing Director  
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We are at an exciting time in human history where we get to reimagine and redefine how and where we work and in doing so improve the world we live in.

It also presents possibilities for a more inclusive workplace which caters much better to people's personal preferences and circumstances, enabling each person to drive the flexible working arrangements that best balance their personal needs with their work.

It opens up more diverse perspectives that people bring to work, as their work overlaps with the 'real world' beyond the standard office spaces, while allowing deeper connections to people's local communities.



## Josip Grabovac

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# Revitalising regional centres with remote work

It seemed like only yesterday when working from home was everyone's dream. It was highly regarded in job descriptions, and people who were lucky enough to work from home became the envy of their friends. Now, in the wake of the COVID-19 pandemic, it has almost become an expectation to be working from home (WFH), even as restrictions across the globe slowly ease.

Within several days of global lockdowns being announced, scores of people had promptly installed video conferencing software programs such as Zoom or Microsoft Teams on their laptops. Everything had changed incredibly quickly, but people adapted well. A recent Capgemini report showed that organisations broadly saw increases in productivity. During Q3 of 2020, out of 315 organisations sampled, 20% of those in the IT sector saw productivity gains. In addition to this, traditionally in-person jobs like production and manufacturing saw an average productivity gain of 15%. This showed that working from home was possible, and in some cases, the better option.

As with all big changes, this presents opportunity. Such a momentous shift in the way that people work is bound to bring up creative points of discussion. One such topic that has arisen is the move away from big cities now that work can be done remotely.

Up until the pandemic, urbanisation was increasing at a rapid pace. More and more people were moving to big cities in search of jobs. On the flip side of the coin, country towns were slowly losing people, especially the young. Now that WFH is an option in more and more fields of work, people are going back to rural towns and cities for the more relaxed lifestyle. The fact that fibre internet is now widely available throughout many rural towns and cities all over the world is further inspiring those looking for a move to the country.

Regional centres must be willing to capitalise on this new trend without losing their small-town charm, which is a tough balancing act. Apart from opening the latest and trendiest brunch spot, there needs to be other services to help

attract city-folk. One such method of doing so is opening up shared office spaces. These are places where individuals or companies can go to rent out office spaces for a period of time to collaborate and share ideas. Anyone from a small business owner to a CEO is welcome to use this space, and most importantly it helps break up the monotony of being at home whilst encouraging networking across businesses.

These shared office spaces can then be integrated with a wider hub-and-spoke model. An organisation may have a large, central office, or hub, in the city. Smaller satellite offices, or spokes, can then be located in regional cities, towns, and suburbs with the definition of 'spoke' being loose – a coworking space, a coffee shop, or even one's own lounge room. This model relies heavily on remote work, with very infrequent, if any, trips to the main hub. Not only does this allow for people to work wherever they want, but travel time is non-existent or miniscule.

This model has already been in use in other industries such as healthcare and aviation. However, it can be successfully scaled to technology-based companies and industries. A good example is Amazon. With its already well established remote working system and its focus on being at the forefront of technology, it has created a hub-and-spoke model in most cities across America. Of course, very few companies have the capital of Amazon, but it does show what can be done.

Nevertheless, there are downsides to this. A sudden influx of high-income, professional individuals to a small regional centre mostly comprised of individuals in a lower-income bracket, can drastically increase the prices of homes and services within that centre. However, as a countermeasure, companies such as Facebook and Twitter have actually scaled down the salaries of employees who have moved away from their San Francisco headquarters to reflect the lower cost of living in other places.

The way that we all work has likely changed forever and with this change comes new opportunities. However, failure to adapt to this change may leave some behind in the dust. There is currently a golden opportunity for entire regions to revitalise themselves – it's up to them to take that chance.

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# How can remote working change the corporate world and drive its overall growth?

The world has become urbanized in the last few decades as most corporate workplaces prefer to be in big cities. However, a new workplace geography is within touching distance, partially due to the rapid acceleration of digital transformation, adoption, and remote working. COVID-19 has played an imperative role in this digital revolution but how can the people outside urbanized cities also utilize said revolution? And why should they?

Countries like Japan, China and several European countries have an ageing population making wider hiring pools the need of the hour. Employing residents from the outskirts of countries can, to a large extent, fill this need. Coincidentally, the rural workforce too has a need of employment. Education, vocational training, corporate teachings all are rapidly becoming more and more accessible to those who need it the most – people in smaller cities and less developed countries. If skills are readily available for rural populations to acquire over the internet in the 21<sup>st</sup> century, why shouldn't work? While this question is more complex and nuanced than it seems, it still needs to be further explored.

The Capgemini Research Institute recently released a report called The future of work: From remote to hybrid where 5,000 members of the workforce from 500 different organizations were interviewed. It was noted that a large majority of these organizations expect at least one-third of their employees to work remotely and over 30% of these companies expect 70% of their employees to work remotely. This adoption of remote work is also due to reported higher work productivity at home, lower overhead costs, no commute, changing expectations amongst the newer working generations and a general paradigm shift towards mobile work.

There are more subtleties to the long-term effects of working on the move or from home, however, for people belonging to less prosperous regions and sub-regions of the world, there's a much higher upside to remote work than

downside. Throughout modern history, rural inhabitants around the world have migrated to metropolitan cities in search of greater opportunity and a "better" life. However, with the onset of mobile working, the need to move to a metropolis has reduced. A few standard resources such as a working internet connection, basic mobiles and computers can enable an entirely untapped workforce to contribute towards the growth of general business and the economy of countries.

Many raise the question of less visibility, work culture, etc. when working from home which are valid concerns. Maintaining and expanding a company's culture poses an unprecedented challenge to company leaders as various human-to-human interactions and office facilities would be more limited or in many cases non-existent during remote work. According to the Harvard Business Review, the key lies in first, acknowledging that both corporate culture and the methods to reinforce it are no longer what they used to be. Second, the organizations need to realize that leaders and employees, not just the workplace, steer company culture. Leading by example, revamping hiring systems, creating more touch points with employees and opening more lines of communication are all ways that can not only maintain corporate culture but improve it too.

There are also other reasons why mobile work will improve communities as a whole. Megalopolises will be less congested and polluted leading to lower property prices, fewer frustrating traffic jams, a healthier and greener environment and a more widespread distribution of both human and physical capital. Bridging the gap between rural and urban employment will also create cohesion and more acceptance amongst people from different regions because everyone will no longer belong to the same one or two cities in a country. All of these factors will contribute to the emotional and mental wellbeing of the workforce, factors that are now more important than ever before.

The transition to mobile working will not be easy, but nothing worth having comes easy. Companies that take initiative, invest resources, effort, and time into the transition to remote work will reap the rewards of the new era of work.

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