CRYSTAL DELTA

WHITE PAPER

The Digital Economy in 2021

BANKING & FINANCE

Contents

About

What makes us different?

People

100+

With over one hundred employees in multi-disciplinary teams, we can scale up or down on demand.

Clients

30+

We currently service over 16 global clients in various industries. We specialise in Financial Services and Banking.

Foundation

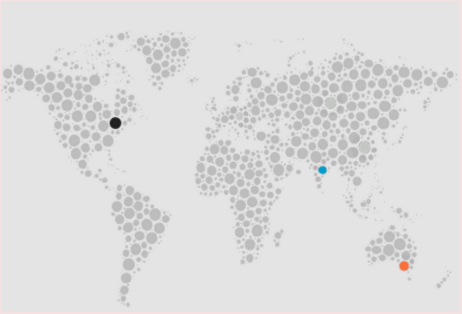
Est. 2014

Founded in 2014, we've grown from a small startup by investing in organic growth, building strategy, thinking design first, and enhancing our data & engineering capabilities

Global

3 Continents

You have access to teams distributed across Australia, India, and the US, providing a broad range of technology capabilities. Think big, move fast, and generate value with the right skills at the right time.



Products

4 SaaS

Building our product mindset and focus on delivering discrete components into customer-focused applications, we launched 4 in-house products and counting...

The current state of play

For the last two-decades, Australian banking has been driven by two significant trends: super-GDP asset growth and leverage, both efficiently gained from technology mostly passed on to customers. New technologies and customer preference/loyalty is dividing the market share, creating a continually contested landscape. How do financial institutes, big and small, create customer value and ongoing experiences to retain their loyalty?

2020 has the Australian banking sector in a state of unpredictability. Reputation, scale, and internal resources directed to strategic disruption to the industry means 2021 and beyond will be a different playing field. Customer experience is everything, with the expectation of mobile banking to be a seamless experience. The rise of smartphones has extended the boundaries of banking technology, with those in the sector requiring in depth reviews of their systems and tech stack, ensuring it complies with ongoing regulations and the bandwidth of technical capabilities. 2021 brings the next era of value creation - for customers, shareholders and the community.

Cloud computing and the customer experience

The question is no longer "if", but "when" will key applications be moved to the cloud. With over 4.13 billion internet users worldwide, the big data revolution is well and truly in full-swing. Industries around the world are improving their capacity to access and mine data from all kinds of sources.

In doing so, existing information-technology (IT) infrastructure is now being put under severe pressure, while increasingly innovative digital solutions continue to be sought, not least in the banking sector. And among the sector's most transformative digital solutions is cloud computing.

Why adopt cloud computing?

The British Bankers' Association (BBA) has identified three key drivers for adoption of public cloud-based services by banks:

Agile innovation

Accessing the cloud increases the ability to innovate by enhancing agility, efficiency and productivity into the cloud environment. It can also help banks to reallocate resources away from the administration of IT infrastructure, and towards innovation and fast delivery of products and services to markets.

Risk mitigation

The cloud helps to lower risks associated with traditional technology, such as capacity, redundancy and resiliency concerns. The ability of cloud computing to scale can equip banks with more control over issues like security. With technology advancing at a phenomenal rate, entrusting in a cloud environment that is capable of managing innovative feats while mitigating risk, provides an organisation with a thought process of "what can we innovate next?" rather than "is our technology regulation compliant?".

Cost benefit

The cost savings of public cloud solutions are significant, especially given the reduction in initial capital-expenditure requirements for traditional IT infrastructure. During periods of peak customer demand, the cloud can allow banks to manage computing capacity more efficiently. When the cloud is adopted for risk-mitigation and innovation purposes, cost benefits arise from the resultant improvements in business efficiency.

How does cloud computing impact customers?

According to Sys Group, by the end of 2020, 67% of enterprise software infrastructure could become cloud-based, with 85% of businesses worldwide already making use of cloud technology to store information.

Although it seems inevitable that all companies will be cloud-based in the near future, how does this affect the banking sector's biggest priority, its customers?

Through accessibility. It's anywhere!

Cloud technologies have allowed for advances in the ways that employees deliver customer experiences through connected data sources. When these systems aren't cloud based, employees are often limited to specific locations where they're able to retrieve data. This accessibility promotes a more efficient workforce that's less reliant on hardware and connecting servers, and instead focused on a 'search and find' process.

Not only are employees benefiting from easy access to information. Customers are also able to log in to self-service applications at the time and place that's convenient to them, they're more likely to be pleased with their customer experience.

Personalising your customer experience

Understanding your customer journey and how they behave creates an opportunity to build technology that compliments their experience. Through data stored in the cloud, customer behavior can be analysed and segmented based on interactions they have with a financial institute, whether this interaction is in person, over the phone, or online.

Collaboration with all team members

According to American Banker, many banks are indicating that some of their workforces will continue to work remotely in 2021, including JPMorgan and UBS Group. How does this affect the customer experience? Cloud functions allow for multiple team members to access the same information at once, as well as allow users in various locations and on varying devices to make updates in real time.

Cloud computing: counter arguments

Cloud computing comes with an insurmountable amount of benefits to the banking sector, but what do financial institutions need to be aware of when implementing or managing a pre-established cloud environment?

The level of security

Secrecy and security are among the most doubtful things in cloud computing. By using a cloud computing system means we are fully entrusted with the security and confidentiality of data to companies that provide cloud computing servers. When you experience a problem, you cannot sue the server for errors in the data.

Internet dependency

The internet is the only way to cloud computing. With minimal connection, the user experience can be hindered. This particularly affects users in developing countries and remote areas that do not have effective internet access.

Compliance

The banking sector has some of the most severe and extreme compliance and regulations. Data protection laws often dictate exactly what your options are in regards to storing and managing your information. By placing this in the cloud, executives are concerned that key pieces could be missed, resulting in significant fines and negative publicity.

Technical problems

Besides that the use of Cloud Computing makes you unable to manage it when there is a problem, you must contact customer support who is not necessarily ready 24/7.

All counter arguments are valid in different respects, however, ensuring cloud deliverables (including compliance and security) are met, seeking third-party expertise is advised. Wealth management organisations like Powerwrap used Crystal Delta to successfully design and deploy a multi-tier container solution, where several instances of the application were interdependent and deployed in Elastic Container Service (ECS).

The influence of artificial intelligence (AI)

AI in the financial services industry continues to be a topic of discussion in regards to under-utilised technology. The aggregate potential cost savings for banks from AI applications is estimated at $447 billion by 2023, with the front and middle office accounting for $416 billion of that total, according to Business Insider Intelligence.

Those in the banking sector have the ability to use AI to transform the customer experience by enabling frictionless, 24/7 customer interactions. However, customers are not the only one to benefit.

Use cases: artificial intelligence

AI is particularly useful to save costs in the front office through conversational banking, middle office in anti-fraud, and the back office for underwriting, but how? This can be broken down into four sectors:

Credit decisions

The days of paying with cash are dwindling, a study in 2019 found 77% of consumers preferred paying with a debit or credit card compared to only 12% who favored cash. But easier payment options isn't the only reason the availability of credit is important to consumers. Customers with good credit aid in receiving favorable financial options, landing jobs, and renting an apartment or home.

The use of Automated Machine Learning (AML) is being used by financial institutions to help calculate borrowing power of consumers with little to no credit information or history. Platforms like these utilise thousands of data points and provide transparency that other methods cannot. This helps lenders better assess populations traditionally considered “at risk”. According to ZestFinance, auto lenders using machine-learning underwriting are cutting losses by 23% annually.

AI is also used for accurate predictive modeling to enhance decision making around issues like fraudulent credit card transactions, digital wealth management, direct marketing, blockchain, lending and more. These machine learning platforms provide financial institutions with more transparency whilst reducing losses.

Managing risks

Risk can cripple a financial institute if not given the appropriate attention. Accuracy in forecast predictions is crucial to the speed and protection of businesses in finance. Using machine learning to reduce margins of error, pinpoint trends, and conserve manpower is no longer a nice-to-have, but a necessity.

Using combinations of cloud computing and natural language processing (NLP), financial institutions can provide answers to complex questions in layman's terms. These systems can not only support accuracy, but aid in anti-money laundering detection to accelerate investigations.

Personalised banking

Regardless of generational placement, consumers are becoming more and more tech savvy. A study by Accenture of over 30,000 banking customers found 54% want tools to help them monitor their budget and make real-time spending adjustments. Additionally, 41% are very willing" to use computer-generated banking advice. Chatbots and AI assistants create personalised financial advice and natural language processing that provides instant, self-help to customer service.

Conversational AI systems automate aspects of the customer experience with accuracy through reducing call center traffic volumes providing customers with additional conversational options, like self-service. AI-powered chatbots also provide users with calculated recommendations and assist with other financial decisions.

Virtual financial assistants are also helpful and more personal ways to provide customers with methods of convenient banking. These solutions integrate with Google Home, SMS, Facebook, Amazon Alexa, web and mobile, and this will continue to expand in 2021. These assistants provide simple knowledge, support requests to personal financial management, and conversational banking.

And finally, AI money-saving assistants that connect with users accounts to analyse spending. These smart applications can cancel subscriptions that are not being utilised, find alternative options for services like insurance, and support with bill negotiations. We can expect to see many more personalised banking methods in the years to come.

Quantitative trading

The process of using large data sets to identify patterns and strategic trade is one of AI's most useful use cases. These algorithms automate the trading process and save valuable time.

AI-powered search engines specifically for the finance industry serve clients like banks, investment firms, and Fortune 500 companies. These systems use natural language processing (NLP) to discover changes and trends in financial markets. For example, brokers and traders can use these systems to access SEC and global filings, earning call transcripts, and press releases for both public and private companies.

Another use case is AI-powered stock rankers that analyse large data sets like price patterns. These systems simplify information into a numerical rank order for stocks. The greater the score, the more likely this stock will outperform the market.

The bottom line: artificial intelligence

With bank revenues exceeding incomes of entire nations, there is no reason not to budget artificial intelligence and machine learning as a priority. AI is projected to reduce banking operational costs by 22% by 2030. With the ability to afford innovation, the question in 2021 is "what's next?", as every financial institute has the opportunity to innovate not only within the industry, but across all industries globally.

In summary: Leveraging Automated Machine Learning (AML), Natural Language Processing (NLP), can conversational Artificial intelligence, can provide a plethora of use cases for credit decisioning, risk management, personalised banking, and quantitative trading.

The year ahead: digital trends in banking & finance

Customer expectations of technology continue to evolve – and for those in the financial services sector that means action has become an imperative. With customers already expecting to access all their banking requirements through a device, in-person, or over the phone, it makes us wonder "what's next?" From insights, to personalised information at a click, what will we see trending in 2021?

Financial regulations

With the financial sector being one of the most heavily regulated industries in the world, the entry of blockchain will further earn it the attention of governments globally. Mistakes cannot be made, even while blockchain investors will complain about regulations not created for them in the first place, security is a prime concern no matter the type of financial services.

One topic that regulators will continue to scrutinise closely is the question of data ownership. The Office of the Australian Information Commissioner (OAIC) have identified the following priority areas to strategically focus on up until June 2021:

1. Protect Australians' personal information wherever it flows Enforcement Privacy.
2. Ensure Australia's privacy and information access rights frameworks are fit for purpose in the digital age Laws and frameworks Privacy Freedom of Information.
3. Be a leader in the global privacy community to strengthen protections of Australian's personal information Policy. This international strategy is intended to guide our international activities until June 2021. However, it is dynamic and will be updated in response to changes in our environment, as new challenges and opportunities arise. We will regularly review and evaluate our actions to achieve the outlined commitments.

Although these priorities are subject to change based on new challenges, they affect all industries within Australia and Internationally.

With companies like Apple promoting their privacy policies on billboards and online, the customer of 2021 will hold banks accountable for not promoting their compliance methods. Most banks strive to have open, honest and collaborative regulatory relationships, but they should do more than this and recognise their role in protecting Australia's reputation for sound finance and fair dealing.

Financial institutes need to become more proactive in the national conversation about our financial system. Rather than treat regulation as an external business risk to be managed, it should be seen as an asset to be publicised and cultivated.

Payment innovations

Digital-only banks are paving the technical evolution of the financial sector. The customer experience now includes P2P transfer, contactless MasterCard transactions, and the ability to buy and exchange Bitcoin, among other currencies.

Payment innovations in fintech have multiple components, and next year these innovations will only increase. From mobile payments, contactless payments, mobile wallets, smart speaker systems, identity verification technologies, AI and machine learning for security, there is no restriction in technology to improve the customer experience.

The number of people using contactless payments stood at 440 million in 2018 alone and is on target to reach 760 million by the end of 2020. Mobile wallets will further replace physical wallets. The wallet with users' credit cards, rewards cards and more will gain a wider audience. Last year it was estimated that 2.1 billion people use mobile wallets

Cybercrime in finance

According to Accenture, the cost of cyberattacks is highest in the banking industry, reaching $18.3 million annually per company. This is not only financially costly, but erodes the reputation of the bank itself. More and more institutions are adopting distributed ledger technology (DLT) and blockchain technology to combat these attacks.

COVID-19 will continue to impact the economy

With security and internal IT teams deployed to handle hardware and remote connectivity among staff, now is an opportune time for cybersecurity to be compromised. In 2021, third- party allocation to support security is vital, as businesses will continue to change the way they work and operate.

Cybersecurity skills shortage

It is expected that the security skills gap will widen to 3.5 million positions by next year. A recent study from Infosecurity Group claimed the global security workforce needs to increase by a staggering 145% to cope with a surge in hiring demand. Unsurprisingly, over half (51%) of cybersecurity professionals said their organization is at moderate or extreme risk due to staff shortages.

Our distributed teams across the globe provide access to a broad range of technology capabilities, to help you think big, move fast and deliver value with the right skills at the right time.