



Bringing it all together

Innovation of retail banking



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Executive summary

In recent years, the financial services industry has been characterised by increased global competition, the transition from paper-based to electronic products, and a raft of regulatory changes. The relentless march of technology has allowed banks to extend the scope of their activities and increase their operational efficiency, automating critical functions such as credit checking and loan approvals.

At the same time, the rapid growth of electronic payments has exposed the weaknesses of complex legacy batch-processing systems and prompted the adoption of new technologies that store and transfer critical information in real time. This digital revolution is also presenting new challenges in terms of ensuring data security and protecting customers from fraud across multiple service-delivery channels.

Against the backdrop of rapid technological progress, the changing behaviour of customers and target customers has become a critical consideration for banks. As the cost of PCs, processing power and memory continue to fall, customers are increasingly interacting with banks in a virtual world, as well as through more traditional channels such as branch visits and contact centre calls. As a result, banks that fail to innovate and compete effectively across all channels may risk losing market share to a new generation of tech-savvy competitors.

In this environment, technological innovation is recognised as a key differentiator among banks today. Institutions in the west increasingly use technology, such as customer segmentation and accessibility software, to tailor services to the needs of specific customer groups, including older people, young people, or people with disabilities. At the same time, banks in emerging markets are exploring the potential of online and telephone channels to deliver services to rural, geographically-distributed populations in the most cost-effective way possible.

In this paper, we outline many more examples of how innovation can help banks achieve new competitive advantage as the pace of cultural and technology change continues to increase. Some areas under discussion include:

- Keeping pace with technology change, which illustrates how banks can invest in their technology infrastructures today to control costs, increase back-office efficiency, and improve customer satisfaction tomorrow.
- Maximising the opportunities of emerging economies, which requires banks to tailor products to the needs of customers in developing countries and extend access to traditional services such as savings and credit.
- Protecting data and customers in a joined up world, which proposes how new technology developments, such as biometric scanning, can help forward-thinking banks combat online fraud and secure sensitive customer information.
- Remaining socially relevant, which explores how banks can use new technology to appeal to a rapidly ageing population, tailor services for younger customers, and deliver personalised offers to individuals.
- Maintaining trust in a digital world, which requires banks to deliver improved service levels to customers, ensure security for key data, and comply with rapidly-evolving regulatory controls.

While no-one can accurately predict the future, this document focuses on likely short-term and longer term developments in the financial services sector. As such, it provides some insight into how banks can think about innovation today to increase competitive advantage tomorrow.

BT: Driving innovation in financial services

Driving innovation is as important to BT as it is to our clients. With investments of £1119 million in 2007, in research and development, a dedicated innovation team, and a showcase for the latest branch technologies, BT is committed to driving advances at BT and across the financial services industry. With more than 25 years of market experience, and partnerships with leading academic institutions such as Cambridge University and MIT, we help our clients achieve their business objectives in a cost efficient and innovative way.

We hope that this document will be useful for forward-thinking retail banks that are building short, medium, and long-term innovation strategies. Whether the ideas contained within it are new or established, it may also help to prioritise innovation projects in line with key market challenges and drivers.

Keeping pace with technology **change**

In the last 20 years, electronic banking products and electronic payments have become ubiquitous, supporting increased automation and driving operational efficiency. During the same period, financial institutions have opened multiple voice and data contact channels, requiring a new, centralised approach to security, transaction processing, and customer relations. While the march of technology has been relentless, evidence suggests that the pace of change is increasing all the time. In this climate, banks that prioritise technology innovation stand to increase their competitive advantage.

Specifically, banks are moving towards consolidated architectures to manage transactions globally. This was demonstrated recently by the full integration of Abbey with Santander's centralised IT systems. As well as driving down 'per transaction costs' this kind of integration initiative prepares institutions for the global consolidation that will determine the retail banking superpowers of the future. Technology innovation can also be used to increase efficiency for smaller banking operations, ensuring they can compete effectively with large conglomerates. "The main source of competitive advantage in 2020 will be cost control, productive efficiency in the back office, and commercial efficiency," says Alejandra Kindelan, chief economist of Grupo Santander. In addition, a consolidated infrastructure helps banks achieve a single view of the customer, something that many have yet to achieve. This will create further efficiencies and support initiatives that significantly enhance the customer experience.

Those banks that do consolidate their infrastructures and win market share will principally grow through acquisition and joint-venture, backed up by strict reinforcement of the global brand. Product offerings will increasingly follow the bancassurance 'whole life' model, and cater to the mass, price-driven market looking for 'one-stop banking'. This will create significant niche opportunities in both conservative and liberal markets, domestically and regionally. Niche banks will offer narrower product ranges, differentiated by style or culture – offering traditional or ethical banking for instance – and there will be increasing emphasis on 'social' banking and insurance developing from the 'social' lending model.



2003 – 2020 **The re-invention of the branch**
In western countries such as the UK and the USA, younger customers are typically tech-savvy, preferring to conduct banking transactions online or by telephone. However, older customers still prefer face-to-face service. For this reason, branch closures have been unpopular with ageing members of the community in recent years. Bearing in mind that 80 per cent of assets are owned by people over 50, forward-thinking institutions are looking for new ways to reinvent their branches and re-establish face-to-face service as a key priority.

2005 – 2020 **Banks converge networking infrastructure globally**
"The search for a global brand and global strategy will be increasingly important as financial markets expand across borders," according to a recent report from the Economist Intelligence Unit. In addition, the research outlines how economies of scale, achieved through global consolidation, will be critical to achieving competitive advantage, stating that: "Banks that set up globalised central processing facilities for back-office work will see per-unit processing costs decline as volume increases."

As the demand for financial services increases in developing countries, and regulation is relaxed, banks that consolidate with established players in emerging markets will win increased market share. So much so, in fact, that some analysts predict a market dominated by a small number of banking superpowers with origins in the East, as well as in the West.

It is also clear that the workplace environment is changing within banks. Departments and teams increasingly collaborate worldwide, requiring new Unified Communication and Collaboration solutions based on converged voice and data networks.

INDUSTRY LEADERSHIP

BT was named leader in the Gartner Magic Quadrant for Networked IT Services for 2006 and has been declared the world's top telecomms company in the prestigious Dow Jones Sustainability Index (DJSI) for the seventh year running. We are also consistently recognised by Telemark Consulting as Best in Class and have won five Gold Awards in categories including Customer Satisfaction (February 2006) and Long Term Relationships for managed data network service providers (June 2005).



In addition to their own proprietary customer networks, banks will grow their reach through 'white labelling' products that are front-ended by high-profile organisations with significant existing reach and differentiated style, such as mobile phone network operators or multi-national retailers.

With increasing focus on global retail operations, many banking organisations will look to segregate their retail business from wholesale, with the inevitable divestment of non-core activities and new levels of consolidation. Increasingly, for example, banks will outsource low-value commoditised banking operations to the low wage economies of the East, while maintaining corporate headquarters in the smart cities of the West. Banking product focus will be

increasingly risk driven, although the regulators will want to see the industry's ability to measure and manage that risk effectively.

Innovative banks will also be investing in new technologies that increase security across multiple channels. In the future, these may include biometric scanners for use with ATM machines, data warehousing solutions that guarantee protection for sensitive customer data, and next-generation authentication for online users. In addition, new technologies stand to revolutionise other areas of the financial services industry, such as insurance, allowing companies to analyse claims more effectively and cross reference them rapidly with information provided by customers.

Finally, technology innovation is likely to change the appearance of bank branches beyond recognition. Understanding that face-to-face service delivery is critical to customer satisfaction, banks are investing in new solutions that balance personalised service delivery with the need to maintain operational efficiency.

Banks recognise the need for increased investment in the latest technologies. In fact, 67 per cent of respondents in a recent McKinsey Global Survey consider that their 'Innovation-related initiatives and investments' will be important for meeting long term as well as short term performance targets.

2008 – 2012 The evolution of e-money

Increasingly, financial transactions are managed by institutions other than banks. Organisations such as Paypal exploit the fact that money is now largely electronic, providing a transaction platform independent of traditional banking services. In addition, our approach to money is changing as organisations offer vouchers, credit and discounts with known values for customers.

Specifically, customers may soon be equipped with digital wallets that can make and receive payments electronically, with little or no intervention from banks. Credit from mobile phone operators and other companies could assume the roles of competing currencies that can be spent in specific stores or under specific circumstances.

As the capabilities of fully-electronic money are realised, banks must change their approach to delivering traditional financial services. Importantly, they must invest in the infrastructure required to process transactions between organisations and people. In doing so, they can evolve to become trading platforms that support the future of multiple currencies and payment methods.

A version of e-money already exists as a number of banks, such as ABN AMRO, already have a presence in the virtual world. Some of these use standard banking business models and allow customers to exchange real currency for virtual currencies.

2007 – 2012 Remote access to expertise

In the future, face-to-face service may not be restricted to customers visiting branches. Instead, customers may choose to hold video meetings with remote agents who are best positioned to answer their queries.

To connect with remote agents in this way, older members of the community may choose to enter branches and use equipment provided. However, more tech-savvy customers may be able to set up videoconferences with agents directly from their home PCs using web cams and headsets.

The benefits of using remote agents are clear for both banks and customers. Banks, for example, can locate their service agents centrally, reducing the cost of local office accommodation significantly. At the same time, customers can be routed to agents with specific knowledge, ensuring they receive the best financial advice first time.

Maximising the opportunities of emerging economies

VISIONS OF THE FUTURE INFORMATION PAYMENTS

In the future, it will be easy to see which products and services consumers typically buy and where. As a result, companies might choose to pay their employees in vouchers for use in their favourite stores or on their favourite websites.

One day, your employer could be paying for all your lifestyle needs, leaving you with a few credits spare for impulse buys. While employers could benefit from using their purchasing power to negotiate good deals, employees may be able to reduce their tax liability. People may also start to try new things, like downloading music to their mobile phones, because they are getting them 'free' or at discount prices.

For banks, there may be opportunities to offer credit card services, travel insurance, tax advice, or other financial services as part of these schemes.

A number of countries and regions are experiencing rapid economic development. While they already represent a large percentage of the population, they also make an ever larger contribution to the global economy. Some of these areas will play an important role in the near future as they continue to develop, enjoying significant domestic and foreign investment.

While global banks rapidly expand into new regions banks in Africa, Asia and the Middle East, for example, continue to gain ground on 'Western' players in terms of profitability. In addition, markets in Latin America are opening up through privatisation and deregulation of previously state-owned banks. At the same time, Asia has a large number of localised financial institutions, offering significant opportunities for consolidation and expansion.

Meanwhile Brazil, Russia, India and China, the so-called 'BRIC' countries, are growing so fast many people are predicting they could overtake some of today's richest countries by the middle of this century. China, for example, has increased spending on research and development by more than 20 per cent each year since 1999 and says that advances in science and technology will account for 60 per cent of its future economic growth. Indian businesses are also applying the skills that they have developed through outsourcing, innovation and research.

This technology-driven growth is mirrored in other sectors of the developing economies, according to Willie Watt, CEO of Martin Currie Investment Management in Edinburgh, Scotland. "The growth potential is greater in Asia, especially in China and India," he says. "Those countries are very undersupplied with financial services such as banking and investment products, and that is where the best long-term growth prospects lie."

1980 – 2012 'Microfinance' delivers financial products tailored to the needs of customers in developing countries

In most developing economies, individuals with bank accounts are in the minority. While retail banks traditionally depend on marketing their products to comparably affluent people in western countries, they must now think creatively to extend savings and credit to wider audiences. With the introduction of 'microfinance' initiatives, forward-thinking banks are beginning to achieve this today.

Microfinance is designed to help less affluent people access or amass sufficient funds to make a meaningful difference to their lives. It is gaining in popularity among banks since studies began to show that poorer people repay debts just as reliably as wealthier borrowers.

The World Bank and other organisations such as the Asian Development Bank (ADB) and the Pakistan Poverty Alleviation Fund (PPAF) have made significant contributions to Microfinance since 2000. Today, numerous banks have received Microfinance licenses, allowing them to provide savings and credit services in developing areas. Although the Microfinance industry is in its infancy, early movers will be those to benefit as emerging markets experience increasing levels of industrialisation and economic growth.

Irrespective of current opportunities for microfinance initiatives, the landscape will change dramatically as developing areas become more powerful financially. Bearing in mind that markets in less developed countries are likely to be leading business growth internationally within 20 years, many will soon enjoy comparable products and services currently available in the west.

Typically, banks in developing countries are now removing ceilings for deposits and paying interest on current accounts. In addition, they are automating key business processes, offering telephone banking services, and even supporting online banking and mobile banking services. ATMs are also increasingly common in urban areas worldwide, giving account-holders faster, more convenient access to their funds, 24-hours a day.

In this environment of rapid progress, established banks have a number of key opportunities. Through consolidation, they can help to eliminate the digital divide between developing and developed economies. In addition, they can share investments in new technology applications that can extend banking services to an ever larger number of consumers.

In addition, populations in developing areas are typically characterised by small rural communities spread over large geographical areas. While there are signs that people are moving towards larger cities, villages and small towns are likely to remain the norm over the next 20 to 30 years. As a result of this, bank branches are unlikely to play as important a role in developing areas as they do in western countries. Young populations in developing areas are also much more likely to adopt online and telephone banking channels, particularly as PCs become ever more affordable.

Ultimately, successful expansion in emerging markets will require banks to align products effectively to the needs of local people. Players in some industry sectors, such as mobile telecommunications companies, are already tailoring products to developing areas. For example, phone credit is now being used as hard currency for goods or services in some areas of Sub-Saharan Africa, including Uganda and the Republic of Congo. By taking an equally creative approach, and extending services such as credit and savings to developing countries through 'Microfinance' initiatives, forward thinking banks can win critical first-mover advantage.



VISIONS OF THE FUTURE PERSONAL BLACK BOXES

Memory has never been so cheap and portable. We can now carry microphones and cameras in small gadgets such as mobile phones, recording moments in our everyday lives. In the future, we may carry small devices that record all our everyday experiences, logging events and emotions.

This development will have a profound effect on financial services, and particularly insurance. Being able to replay events, such as accidents, will enable prompt payments to customers and eliminate fraud altogether, supporting reductions in premiums.

2008 – 2012 Portable translation devices for simple conversations

Bank staff may soon have access to devices that translate languages in near real time. Allowing customer service agents to take calls in one language and having them translated instantly into their own language, will enable banks to use existing contact centre infrastructure to support users in developing countries. Where it may not be financially viable to set up a contact centres to support customers in small developing countries, banks may choose to invest in centralised facilities and devices that allow conversations with users that speak other languages.

As well as helping banks penetrate new, emerging markets, this technology could support increased international working. As a result, banking executives may have new opportunities to engage with the global banking community. In addition, logging conversations using translation devices may help banks work more transparently and support compliance with required regulatory legislation.

2008 – 2020 Innovative payments methods extend electronic services to developing areas

Workers in developing areas rarely have personal bank accounts and are typically paid in cash for their labour. If wages are lost or stolen, the result can be disastrous for entire families. In addition, it is difficult to ensure that taxes are paid on cash payments, reducing public funds available for communications and transport infrastructures that are required for economic development.

To address these issues, forward-thinking banks are identifying payments systems that operate independently of traditional

bank accounts. These include Value Stored Cards, which can be charged with credit by employers and used by employees to pay for goods and services or withdraw cash from ATMs.

Transactions using Value Stored Cards require employees to enter their personal identification numbers, ensuring the security of their funds. In addition, those that later decide to open bank accounts may decide to bank with the institution that first issued them with a Value Stored Card. This can potentially help banks increase their market share and competitive advantage.

Protecting data and customers in a joined up world

In the last 12 months, a number of high-profile banks have been found guilty of misusing customer data. In the most extreme cases, sensitive information, such as account numbers and card details, have been thrown in bins in public places. At the same time, incidences of online identify fraud continue to increase dramatically, requiring banks to re-evaluate their approaches to data protection and security.

To combat online fraud, many banks are introducing 'two-factor' or 'strong' authentication that requires users to use both passwords and physical devices, such as cards, to access their accounts. This promises to reduce fraud significantly in tandem with schemes such as Verified by Visa and applications that log typical customer behaviour. However, deployment of these solutions is likely to remain expensive and impractical for the majority of home users.

While current innovations have the power to reduce fraud significantly, the widespread deployment of biometric scanning promises significant benefits. Today, the biometric generates several billion dollars annually. In addition, several US and Japanese banks have already deployed biometric solutions, helping the technology shake off its 'sci-fi' status and enter the mainstream. Naturally, there will also be customer resistance to the use of biometrics in general and there is evidence that complex login procedures are unpopular.

While the rights of consumers must be protected, money laundering, global terrorism and regulatory requirements are all contributing to the growth of the biometrics industry. With campaigns to win the hearts and minds of account holders, deployments in local branches may begin in the near future.

VISIONS OF THE FUTURE CELEBRITY CASH

Companies now issue their own credit in terms of gift vouchers or store cards. We also see rare and collectable items, such as stamps or paintings, having known values. As the cult of celebrity reaches maturity, money or credit may even be endorsed by movie and singing stars in the future.

This kind of 'celebrity cash' may have buying power based on more than its face value. If it's rare, the value will be higher; if it's common, lower. Likewise, stars of the moment will have greater buying power, while cash affiliated to waning celebrities could suffer devaluation.

Other 'strains' of cash may also evolve based on market trends and corporate initiatives. These could include multimedia cash that is specifically designed to pay for audio and video downloads, safe pocket money that can only be used for goods suitable for children, and ethical cash which has been generated in line with fair trading guidelines. There may even be green cash with no carbon footprint that has greater purchasing power at environmentally friendly stores!

2008 – 2012 Personal data security and the introduction of biometric scanning

Identity fraud is a major cost centre for all retail banks. For this reason, many forward-thinking institutions are keen to introduce biometric scanning as a way of authenticating their account holders.

One of the key benefits of, for example, iris, fingerprint, vein or voice authentication, aside from virtually eliminating fraud, is that customers will not necessarily need to carry plastic cards

or identification. Instead, biometric information can be verified in real time by centralised, highly secure authentication servers.

Biometric scanning also has the potential to speed up bank transaction times, eliminating the need for passwords among employees and customers. It can also be used to create a complete record of transactions, helping banks achieve compliance with regulatory legislation, such as The Sarbanes-Oxley Act and Basel II.

2008 – 2020 Protecting sensitive information with next-generation network security

As well as effectively protecting networks with next-generation firewalls and anti-virus applications, banks must take an increasingly strategic approach to protecting sensitive data. As well as implementing best practices for disposing of information at the end of its lifecycle, banks will increasingly depend on networked storage that provides multi-layered security.

In part, this approach means that bank workers should have little or no access to sensitive data, requiring outsourcing to third-party storage providers and security specialists. As well as

insuring that data is stored in fully-accredited data centres, banks can be sure that sensitive customer information is never exposed during malicious attacks targeted at their own networks.

Part of ensuring security for key customer data is to implement robust security policies for remote and home workers. As the teleworking revolution continues to gather pace, the threats from malicious network attacks to increase and banks must move quickly to ensure customer data is adequately protected.

Remaining socially relevant



As the population in western countries continues to age, banks must align their products to the specific needs of older people. At the same time, they must cater to younger customers, who increasingly choose products and services based on their social backgrounds, lifestyles, or even music tastes.

To ensure a fully inclusive product and service portfolio, banks must also focus on highly-accessible contact channels for people with disabilities. To achieve this goal, websites must be clear and readable, with audio features and avatars to support users with limited physical ability. In addition, physical accessibility measures, such as low ATMs and wheelchair access, are a prerequisite for bank branches and offices worldwide.

Serving customers of all ages, from increasingly diverse backgrounds, with different levels of physical ability, banks must remain culturally and socially relevant to maintain their competitive advantage. One key to achieving this will be more sophisticated customer segmentation and the delivery of personalised services to customers. While supermarkets have long targeted deals to individual customers using loyalty schemes, a large number of banks have yet to implement effective CRM strategies.

As well as targeting products and services to customers more effectively, banks must prepare themselves for the commoditisation of basic financial services. With lifestyles and brands prominent in the minds of consumers, the retail banking market is open to 'virtual' operators that will enter the market with no service-delivery infrastructures of their own. A number of supermarket brands have already moved into this market and soon brands such as Apple and Virgin may offer payments cards that offer discounts for music downloads or gaming products. These will rely on established institutions to deliver their services at the back-end, while ensuring that front-end offerings, and marketing communications, are targeted effectively to specific customer groups.

As mobile communications services have become increasingly commoditised over recent years, this 'virtual' operator model has emerged triumphant. Now, this phenomenon is likely to become a reality in the retail banking market, forcing financial institutions to embrace new ways of doing business.

Finally, as retail banks embrace technology innovations to maintain their competitive edge, they must also consider how technology can help in developing a sustainable business. "A sustainable business is one that seizes the opportunity to improve its profitability, competitiveness and market share, without compromising resources for future generations, says Dr. Daron Green in 'Planning for a Sustainable Future: Helping Organisations Reduce Their Carbon Footprints'. "A business is considered sustainable if it has adapted its practices for the use of renewable resources and holds itself accountable for the environmental impact of its activities."

As sustainability has become an increasingly high-profile and critical business topic in the financial services industry, more and more banks recognise their responsibility to adopt and deploy green strategies that reduce their carbon footprint. A number of factors have influenced this green agenda, including environmental regulations such as the Kyoto targets and, more importantly, concern among customers and shareholders.

2008 – 2012 Advertising is personalised to the viewer

As banks invest in systems and processes that help them understand customers better, advertising is becoming ever more sophisticated. Using transaction histories and other financial records, banks are beginning to make personalised offers to customers via printed and email communications. In addition, some banks are analysing customer account details during ATM transactions, suggesting alternative products or services that may be of interest. Where a customer has a large sum of money in their current account, for example, banks have the option to offer them additional products, such as savings products, on the ATM screen. As banking using mobile devices becomes increasingly popular, banks also have the option to target customers using personalised text messages or video clips.

In the near future, based on the location of customers' mobile phones or tagged cards, banks could be able to market appropriate products and services to individual customers visiting branches. Already, banks have the option to change in-branch advertising based on the time of day and the type of customer most likely to be visiting.

To maintain the confidence of customers, and comply with the Data Protection Act, personalised advertising must never reveal sensitive financial information. Used correctly, however, it offers significant opportunities to increase revenues from existing customers and to drive new competitive advantage.

2007 – 2050 Lifestyle brands dominate

Many financial services are increasingly seen as commodity products. This creates wholesale markets where brand is king and where customers choose products and services based on lifestyle preferences. While one customer may choose a bank account that provides discount tickets to football matches, another may choose a provider that offers special deals on air travel or car insurance. However, underlying services may all be delivered by the same traditional bank.

In this environment, new entrants to the market, such as specific vehicle insurance providers for women, will impact on the market share of traditional operators. Through collaboration and competition, the role of back-end service providers will be decided, and those that add most value will achieve competitive differentiation.

2007 – 2050 Catering to an ageing population

In the UK, Saga specialises in delivering financial services to older members of the community. It offers a single point of contact where customers can access current and savings accounts, insurance, holidays, and information on travel, lifestyle, health and other related issues. Importantly, it has also created an online community where members can discuss shared interests and problems. In doing so, it has extended its role beyond that of a traditional financial services provider, adding significant value to its customers.

As the population in western countries continues to age, mainstream banks must follow the example of more specialist providers. After all, "a mid-2005 study by Allianz Global Investors predicts that west European pension markets will more than double in the next decade, from €7.4trn to €16.4trn in 2015." To maximise the potential of this changing demographic, banks must offer bundled services appropriate to ageing customers, build online communities of older people as described above, and supplement services with relevant news and information.

Maintaining trust in a digital world

For hundreds of years, banks have been trusted with our most valuable possessions. However, recent research suggests that the majority of UK customers are now sceptical about their bank's integrity. In addition, the least trusted banks tend to have no high-street presence, suggesting a strong link between trust and face-to-face service delivery. In addition, customers will select high-value services such as pensions, property and insurance based on whether or not they trust institutions and the employees that provide them with financial advice.

While the perceptions of security are typically identified as the key factor in maintaining the trust of customers, other issues, such as respect for customers, reliable websites, and positive attitudes among employees, are also critical. Ultimately, respect for customers and excellent service levels are key differentiators as people choose which institution to bank with.

Within the financial services industry as a whole, trust also depends on compliance with increasingly restrictive regulatory regimes, including Basle II and anti-money laundering directives such as the

US Patriot Act. Reinforcing general market perceptions, Forrester research, conducted in 2006, confirms that compliance and information management are still among the greatest challenges facing retail banks.

To address the requirement for compliance, mitigate operational risk, and engender trust in the marketplace, forward-thinking banks are deploying technology solutions that provide real-time visibility of their critical business processes and data. In doing so, they are increasing the transparency of their operations and building the trust of customers and regulators.

VISIONS OF THE FUTURE SUPERCOMPUTERS BECOME UBIQUITOUS

In the future, supercomputers will process information almost as quickly as the human brain. Retail banking customers will be able to ask machines for financial advice and quickly receive answers based on millions of complex calculations.

In this vision, computers will handle most enquiries and transactions. Banks will be able to deliver a plethora of new self service options and deliver individually tailored services for customers with special needs. However, the proliferation of supercomputers may put a premium on customer service delivered by humans. This is to say that if customers prefer speaking with a human customer services representative, banks may levy an extra charge for the privilege.

With the proliferation of supercomputers, achieving compliance will be faster and cheaper, with simple upgrades for machines based on changing regulations. However, greater dependence on technology will require next-generation network security and data protection.

As banks benefit from the evolution of supercomputers, customers will also become better informed.

This is because they will be able to cross reference a large number of financial products and services in real time using 'Software Robots' to compare and contrast offers from a large number of banks globally. These tools, which will be descended from simple price comparison algorithms such as those used by moneysupermarket.com and its competitors, will breed better informed clients who demand more from their service providers. While this may open new opportunities for cross and up-selling, it may also impact negatively on margins across the industry.

2008 – 2012 Universal monitoring of business transactions

Basle II now requires that retail banks show regulators an accurate, real-time picture of operational risk management across all business areas. At the same time, legislation such as the US Federal Financial Institutions Examination Council (FFIEC) guidelines are making protection of personal data and intellectual property a priority and increasing the importance of technologies such as Enterprise Single Sign-On (ESSO) and multi-factor authentication.

By implementing new software applications on consolidated networking infrastructures, banks can effectively monitor transactions globally, and in real time. As a result, they can accurately report on security threats and quickly address weaknesses in their operations.

Perhaps most importantly, this approach allows banks to demonstrate compliance to auditors quickly and effectively, lowering costs and reducing the risk of the financial penalties associated with non-compliance.

2008 – 2020 Preventing money laundering

The cost of fighting money laundering is increasing dramatically year on year. Some of the reasons for this are increasing complexity in financial markets, exposure to unfamiliar emerging markets, and the dramatic growth of alternative assets. Because person-to-person cash transactions remain difficult to trace, trials have taken place to track banknotes using embedded RFID tags, which are growing ever smaller and cheaper to produce.

Already, companies have developed 'passive' RFID chips that need no power supply of their own. In the near future, the

technology could be used to reduce the activities of criminals such as drug-dealers and terrorists, vastly reducing banks losses and ensuring compliance with regulatory controls.

Technology can also help to fight money laundering by helping banks understand the behaviour of their customers and identifying when transactions seem 'out of character'. New applications, such as biometric scanning, can also be used to ensure that only bona fide customers set up bank accounts, helping to reduce fraud globally.

Conclusion

While it is impossible to predict the future accurately, innovation continues to offer great potential for developing the financial services industry. This will support the convergence of banks and their networking infrastructures globally, increasing automation, reducing transaction costs, and helping to fight fraud. In addition, employees will collaborate seamlessly across the globe, reducing the cultural and language barriers that currently exist, and increasing overall productivity.

For customers, the future will bring a number of developments that personalise service and cater for specific lifestyle requirements. Those that prefer to visit branches, including older members of the community, will see next-generation authentication systems and video links to remote service agents. By contrast, those who are comfortable to conduct transactions online and by phone will have a range of new self-service options that reduce waiting times and improve the customer experience.

The only certainty in a rapidly-changing world is that banks that fail to prepare for rapid advances in technology could lose market share to more innovative players. This is demonstrated by the meteoric rise of Icesave, a Icelandic bank which has quickly amassed \$30 billion in savings with no branches or physical infrastructure of its own.

BT: Helping you prepare for an uncertain future

BT is one of the world's leading providers of networked IT services to the global financial community, supporting 10,400 financial services sites worldwide. To ensure we remain at the cutting edge, we invest heavily in research and development, collaborating with a large number of industry partners and academic institutions.

Our 21st Century Network (21CN), a global IP infrastructure, helps banks converge their voice and data communications on a single platform globally. In doing so, they are reducing costs, increasing employee collaboration, and supporting the next-generation of financial services.

Our staff of more than 2,000 financial services industry experts focuses on driving innovation and enhancing our customers' operations. In addition, our dedicated financial services network, known as the Radianz Shared Market Infrastructure, provides high performance, security and availability for financial services applications.

As a commitment to the industry BT has also created the Agile Bank. This state-of-the-art facility that showcases next-generation financial solutions. Built in conjunction with leading players in the retail banking industry and underpinned by a continuous research programme, the Agile Bank demonstrates a number of multi-channel banking scenarios. Many of these cover issues such as security, targeted marketing, contactless payments, access to remote expertise via video, contact centre virtualisation, collaboration and customer handling.

BT offers innovative, vendor-agnostic, global technology solutions that support next-generation financial services. Our partnerships with leading academics, our investments in research and development, and our creation of the Agile Bank, ensure that we remain at the cutting edge of retail banking technology. If you would like to know more about how BT can help you drive innovation in your business, please contact your BT account manager.

To read more about BT and innovation please look at <http://www.btplc.com/Innovation/index.cfm>

SUSTAINABILITY

BT encourages financial services companies to adopt and pursue socially responsible business practices. While working on our own sustainability agenda, BT has developed strategies that help others reduce their impact on the environment.

We are currently involved in a number of initiatives that demonstrably reduce carbon emissions, including:

- Server/datacentre virtualisation and consolidation: Reduces server real-estate by 10-50 per cent, reducing carbon emissions significantly.
- Application hosting through shared infrastructure and services: Consolidates multiple applications for email, billing or payroll on shared BT infrastructure, reducing carbon footprint.
- Agile/home working: Allows financial organisations to reduce real estate costs, eliminate travel between offices, and cut emissions.
- Teleconferencing/video conferencing and web conferencing: Allows people to meet virtually while maintaining visual contact, reducing the need to travel and lowering emissions.

Offices worldwide

The services described in this publication are subject to availability and may be modified from time to time. Services and equipment are provided subject to British Telecommunications plc's respective standard conditions of contract. Nothing in this publication forms any part of any contract.

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Designed by Unigraph Limited 22919/11/07.

PHME 54344

