How Financial Services Firms Can Harness Disruptive Technologies to Drive Growth and Profitability.
Summary

Financial services (FS) firms are fighting as never before to protect their business and remain profitable in the face of change. Shareholders are looking for improved performance, customers are demanding higher levels of service and regulators keep changing the rules of the game. In addition, FinTechs are pulling the rug out from under established FS businesses by offering new services through new channels.

Many of these FinTechs have developed new technologies that disrupt “business as usual”. The good news is that established FS firms can also leverage these disruptive technologies, to cut costs, improve performance and offer their customers enhanced services.
Blockchain

Definition
A digital, distributed transaction ledger with identical copies maintained on each of the network's members' computers. All parties can review previous entries and record new ones. Transactions are grouped in blocks, recorded one after the other in a chain of blocks (the 'blockchain'). Cryptography protects the links between blocks and their content, so the ledger and the transaction network are trusted without a central authority.

In several use cases, blockchain is powering FinTech innovations and enabling FS firms to cut costs and improve transparency. Now is the time for FS firms to act. A survey conducted by Deloitte shows that 40 percent of executives from the Telecom, Media, and Tech (TMT) industry wish to invest millions in blockchain research in the near future. According to the report, approximately 59 percent of the respondents believe that blockchain has the potential to disrupt their respective industries, and 29 percent said they had already joined a blockchain consortium.

Use cases in financial services

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<tr>
<th>Use cases in financial services</th>
<th>Related benefits</th>
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<tbody>
<tr>
<td>Distributed ledgers for traditional banking and cryptocurrencies, such as bitcoin</td>
<td>Speeds up the back office settlement process</td>
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<td>Smart contracts with computer protocols that digitally facilitate, verify, or enforce the negotiation or improve performance of a contract</td>
<td>Allows credible, trackable, and irreversible transactions without requiring verification from third parties</td>
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<td>Cross-border payments using cryptocurrencies</td>
<td>Cuts out the middleman, provides guaranteed, real-time transactions across borders, and according to a Deloitte study, can reduce costs to 2-3% of the total amount</td>
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<tr>
<td>Removes the middleman in stock exchanges and can eliminate need for a central system to bring supply and demand together</td>
<td>Speeds up and simplifies clearing and settlement of cash securities, potentially saving investment companies around $11 - $12 billion in fees</td>
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<td>Online identity management with users choosing how to identify themselves and who will be informed</td>
<td>Can re-use identification for other services</td>
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<td>Loyalty and rewards management through transparency and traceability of transactions</td>
<td>Helps banks and insurers to create more captivating loyalty and rewards programs and enhance engagement</td>
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<td>Loans and mortgage processing incorporating smart contracts</td>
<td>Significantly simplifies processes, removing inefficiencies, reducing time and cost, and improving customer experiences</td>
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<td>Claims management processing using smart contracts</td>
<td>Streamlines the process and makes it more secure, reliable and cost-efficient</td>
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Artificial Intelligence (AI)

Definition
Artificial Intelligence (AI) is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans. AI mimics human cognitive functions such as learning and problem solving.

AI has long been perceived more as a sci-fi concept than a real-world capability, until now. Real-world applications of AI—such as understanding human speech, directing self-driving cars, and automatically routing delivery networks—have advanced dramatically in the past decade with the explosive growth in inexpensive computational power and the advent of Big Data.

Currently, more than $1 trillion of financial services cost structure could be replaced by machine learning and AI, according to Autonomous Research, the leading independent research firm covering the FS industry in Europe, the US and China. This would affect 2.5 million employees in the US alone. The numbers keep growing: by 2030, Autonomous expects $490 billion in costs to be exposed to AI in distribution, $350 billion in the middle office, and $200 billion in financial product manufacturing.

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<td>Cognitive use, such as predictive analytics, robo-advisory and robo-investing</td>
<td>Significantly lowers the cost of asset management, so individuals without high levels of wealth can invest, and eliminates human error and conflicts of interest</td>
</tr>
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<td>Regulatory compliance: AI-powered automation remembers and complies with laws with minimal error or exception and detects fraudulent or illegal activity</td>
<td>Reduces risk of noncompliance or fraud</td>
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<td>Algorithmic stock trading applications</td>
<td>Boosts returns and profitability potential by predicting stock performance</td>
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<tr>
<td>Automation of mid- and back-office functions, such as trade settlement</td>
<td>Improves accuracy and speed, while cutting cost</td>
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<tr>
<td>Chatbots backed by conversational AI abilities respond to customer’s questions</td>
<td>Enables faster, more accurate and consistent answers to questions at a lower cost than a call center</td>
</tr>
</tbody>
</table>

Big Data and analytics

Definition
Big Data is data sets that are so big and complex that traditional data processing application software can’t deal with their volume, velocity and variety.
Digital transformation

Definition

A systematic replacement of legacy systems to gain the front-end and back-end capabilities necessary to deliver new and more customer-centric modes of engagement across every user touchpoint.

Digital transformation is sweeping through all industries, reshaping the customer experience to meet the expectations of today’s consumers. The FS industry, too, has to change because customers demand a higher level of service. For example, according to the PwC 2017 Digital Banking survey, 46% of customers now skip bank branches altogether, relying instead on smartphones, tablets, and other online channels. Digital transformation isn't just for customers—for FS firms, it offers huge increases in back-office productivity and efficiency.
Cloud computing

Definition
A pay-per-use model for on-demand network access to a shared pool of computing resources—such as network infrastructure, servers, storage, applications and services—that can be rapidly provisioned, configured and released by a provider with minimal effort required from the organization that purchases the resources.

One of the biggest roadblocks to digital transformation is the cost and complexity of the computing infrastructure to support it. Cloud computing enables digital transformation because it is a highly responsive and cost-effective way to provision infrastructure of any size. Accenture recently announced that, “Our perspective is that the time for waiting is over; now is the time for a bold move to the cloud. Cloud capabilities have evolved so rapidly that cloud can support any strategic direction. Banks and their financial services peers can realize important benefits by adopting a cloud-based approach to digital transformation.”

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<td>Application development/migration by moving to a SaaS model to help “future proof” offerings</td>
<td>Gain flexibility, increase value, and speed to market for optimal competitiveness</td>
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<tr>
<td>Analytics enables firms to use the cloud for data warehousing, business intelligence, batch &amp; stream processing, and machine learning to extract informed insights from data</td>
<td>Increase business profitability by paying only for the computing resources needed</td>
</tr>
<tr>
<td>Use dynamic resources for compute-intensive applications such as pricing, modeling, market positions and risk management</td>
<td>Faster response, greater customer satisfaction, and enhanced competitiveness</td>
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<td>Disaster recovery &amp; business continuity hosted externally by an expert team on a highly secure platform that delivers security and protection quickly and economically</td>
<td>Protect critical infrastructure and systems without incurring the expense of another physical site or specialized manpower</td>
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<td>New digital workflows</td>
<td>Support more effective collaboration between formerly siloed departments and businesses</td>
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<tr>
<td>Reduced data storage costs and expert support for big data and analytics</td>
<td>Support scale and business growth</td>
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**Conclusion**

The world’s leading FS organizations are far along in their digital transformation, leveraging innovations to win and retain customers, cut costs and increase efficiencies. At this stage, there is no longer an early-adoption risk, but rather consequences for not taking full advantage of these new capabilities.

However, firms should not invest heavily in fixed infrastructure. That is where hybrid IT adds value—and why many of those firms have chosen Lumen as their partner in adopting new technologies.

Lumen offers scale and agility, enabling FS firms to provide innovative products and services. FS firms will swiftly and cost-effectively benefit from the new technologies described in this paper and by leveraging the Lumen offerings.

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**Network services including Internet, Ethernet, MPLS, and Wavelengths**

Achieve scale efficiencies and deep expertise across networks and support goals with a ubiquitous, secure and cost-effective network service to transmit massive volumes of data, connect to trading venues and partners, and deliver digital services at scale.

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**Multi-Cloud Management (Cloud Application Manager) and Cloud Connect for secure connectivity to your cloud environments**

No matter which cloud architecture a company chooses—public, private or a hybrid—our robust network and comprehensive operating procedures protect critical data and help ensure availability and security of applications.

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**Private Cloud / Public Cloud / Bare Metal infrastructure**

Move seamlessly across hosted and cloud environments with an Infrastructure-as-a-Service platform that can include physical servers alongside virtual instances. Pay-as-you-go flexibility and a unified interface deliver all the power a business needs—and charges only for what the firm uses.

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**Big Data as a Service**

Get the most from Big Data with Big Data storage, processing and analytics in the secure cloud.

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**Colocation and managed hosting, storage, backup, and disaster recovery infrastructure**

Outsource the exacting day-to-day work of keeping the lights on in your data center. Lumen and Cyxtera offer scalable, rock-solid data centers and 100% uptime for your physical and virtual infrastructure.
Data science and analytics systems, software, and services

Put data to work to drive strategic and tactical decision-making using our Analyze-Visualize-Monetize™ methodology. Leverage the big data and predictive analytics expertise of a team with extensive experience across financial services and other industries.

Managed security services

Stay ahead of evolving threats to infrastructure with these cost-effective services that lower the TCO of defending infrastructure assets and websites and help ensure compliance with regulations.

Managed security services

Design next-generation IT solutions utilizing a variety of specialized IT skills. Our experts are skilled in discovery and assessment for a variety of IT disciplines, building roadmaps and providing practical recommendations regarding your IT initiatives.

Footnotes

1. Deloitte: Telecom Executives Plan to Invest Millions in Blockchain Research
6. Moving to the Cloud: A strategy for banks in North America - Accenture

Professional Services

With Lumen Professional Services, you can leverage the expertise and experience of our architects, project managers, engineers and technicians who work on our global IP network every day.

Lumen (NYSE: CTL)

Is the second largest U.S. communications provider to global enterprise customers. With customers in more than 60 countries and an intense focus on the customer experience, Lumen strives to be the world’s best networking company by solving customers’ increased demand for reliable and secure connections. The company also serves as its customers’ trusted partner, helping them manage increased network and IT complexity and providing managed network and cybersecurity solutions that help protect their business.

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