The future of asset servicing - Shaped by three disruptive technologies

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A huge wave of technology disruption is heading toward the asset servicing industry. Within a five-year timeframe, robotic process automation (RPA), blockchain, and cognitive systems will have a dramatic change and a profound, lasting impact on service providers' operations.

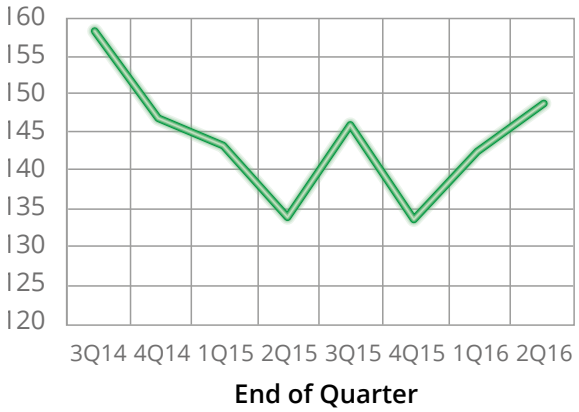
These disruptive technologies combined offer enormous potential for asset servicers to create efficiency, reduce risk, and improve the quality of service to clients. Here we describe where these impacts will be felt most, and outline actions that asset servicers can take to ensure they can ride the wave of technology disruption without being consumed under it.

Asset servicing today

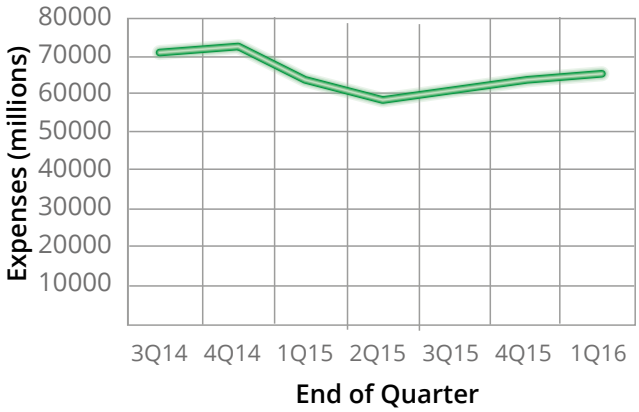
Why is asset servicing standing squarely in disruption's path? According to Deloitte research, the industry employs 200,000 people worldwide. It is argued that the industry is at this level partly due to inefficiencies that accumulated in its systems and processes over decades. Many of these fulltime employees (FTEs) perform manual, repeatable tasks that automated technology can now cost-effectively replace.

The value of Assets under Management is rising, yet the challenge for asset servicers is considerable: since 2008, the regulatory environment has been the dominant bias for their development, and as a consequence, operational expenses and the number of FTEs are rising too. While technology has evolved, the focus on regulatory change and cost reduction means the industry has failed to keep pace. However, now more than ever, alarm bells are calling for new technology to replace back- and middle-office repetitive, manual, and cost-inefficient processes, with improved process automation—delivered on a continuous basis.

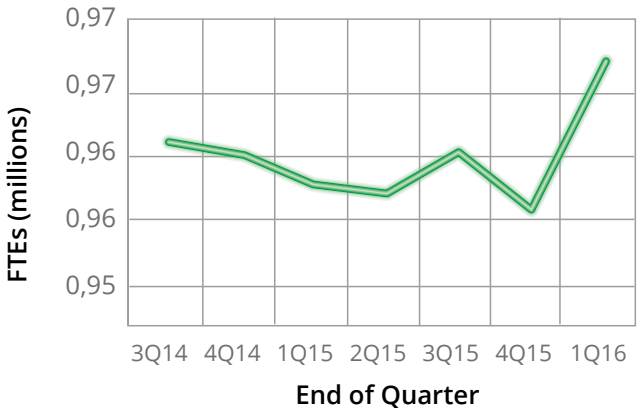
Industry AuM



Expenses



FTEs



Disruption uncovered: robotic process automation, blockchain, and cognitive technology

What are these disruptive technologies? They are technologies that do not develop in a linear way, but evolve much faster and have a greater impact than traditional technologies. Here we've chosen these three technologies because each represents the greatest disruption posed in the short-term (automation), medium-term (blockchain), and longer-term (cognitive technology).

Continued levels of repetitive manual activities still embedded within asset servicing processes are making robotic process automation (RPA) the ideal candidate to automate much of the standard asset servicing value chain. Blockchain's impact on the wider financial ecosystem will make trading and post-trading processes much more efficient, improve regulatory control, and potentially remove multiple intermediaries. Cognitive technology is more likely to have an effect on asset servicing further into the future. Simon Ramos, Advisory & Consulting partner at Deloitte Luxembourg, recognizes that there are real opportunities surrounding cognitive technology and that asset servicers need to be cognizant of this emerging technology and its potential to reform the industry.

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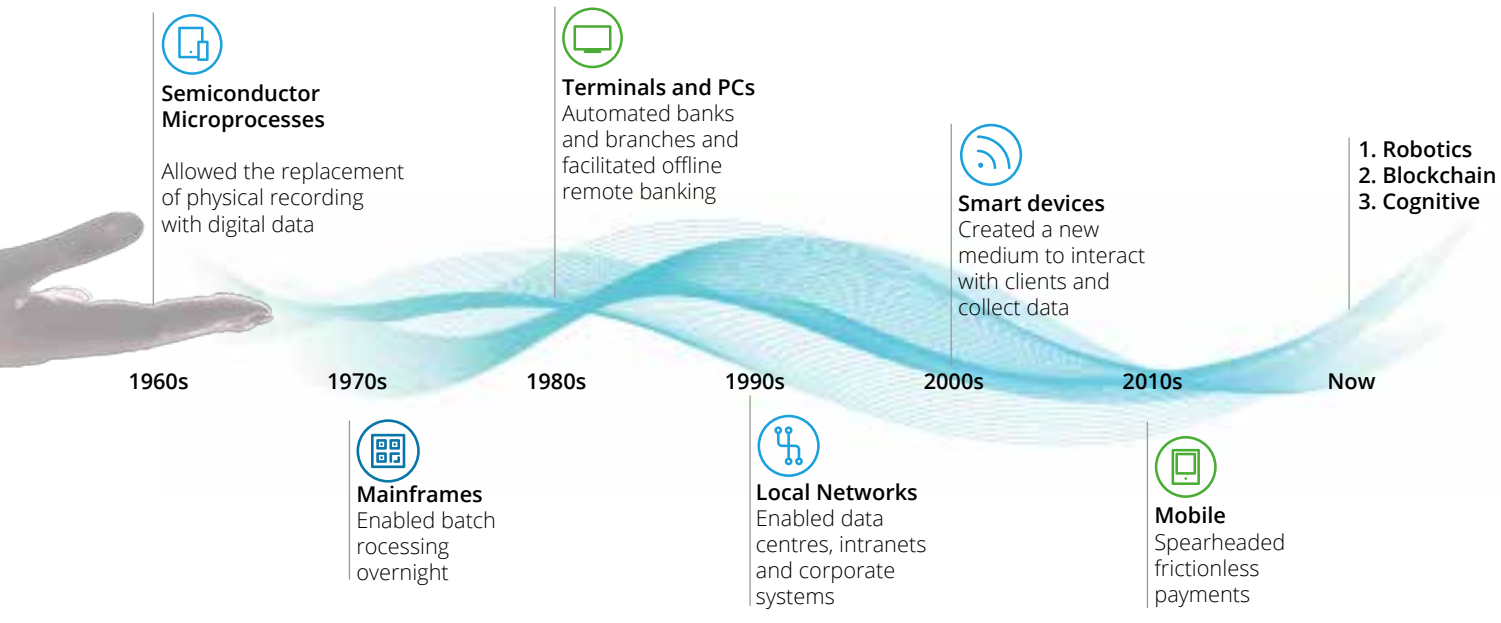

RPA explained

Robotic process automation refers to a set of software tools called robots (or bots) that perform routine or repetitive business processes—the kind that are typically carried out today by shared service centers and back office processing teams. They are ideally suited to the challenge of business processes that straddle multiple IT systems that don't always talk to each other, or are too time-consuming for humans to perform, yet which don't warrant large scale IT transformation.

Robots are...

- Computer-coded software
- Programs imitating human Interaction with applications
- Cross-functional and cross application software

Which can interact with all application types...

- ERP
- Windows
- Excel, Word
- Outlook
- Mainframe
- Citrix
- Explorer
- BPMS

Robots like processes that are...

- Rule-based & repetitive
- Based on structured input data
- Mid-to-high transactional volume
- Prone to human error
- Low exception rates and process variation
- Fluctuating demand

There are real opportunities surrounding cognitive technology and asset servicers need to be cognizant of this emerging technology and its potential to reform the industry.

The commercial attractiveness of this approach is self-evident, as a license for a software robot is likely to cost less than an onshore staff member or an offshore staff member. Today, thanks to advances by the specialist providers, the software has also become more agile, adaptable, and accessible. There are nonfinancial benefits too, as robot-based process performance is designed to be more predictable, consistent, and less prone to errors compared to a human process, thus reducing operational risk. Moreover, a robot can typically be deployed in a matter of weeks. Once in place, new processes can often be assigned to them in days if not hours.

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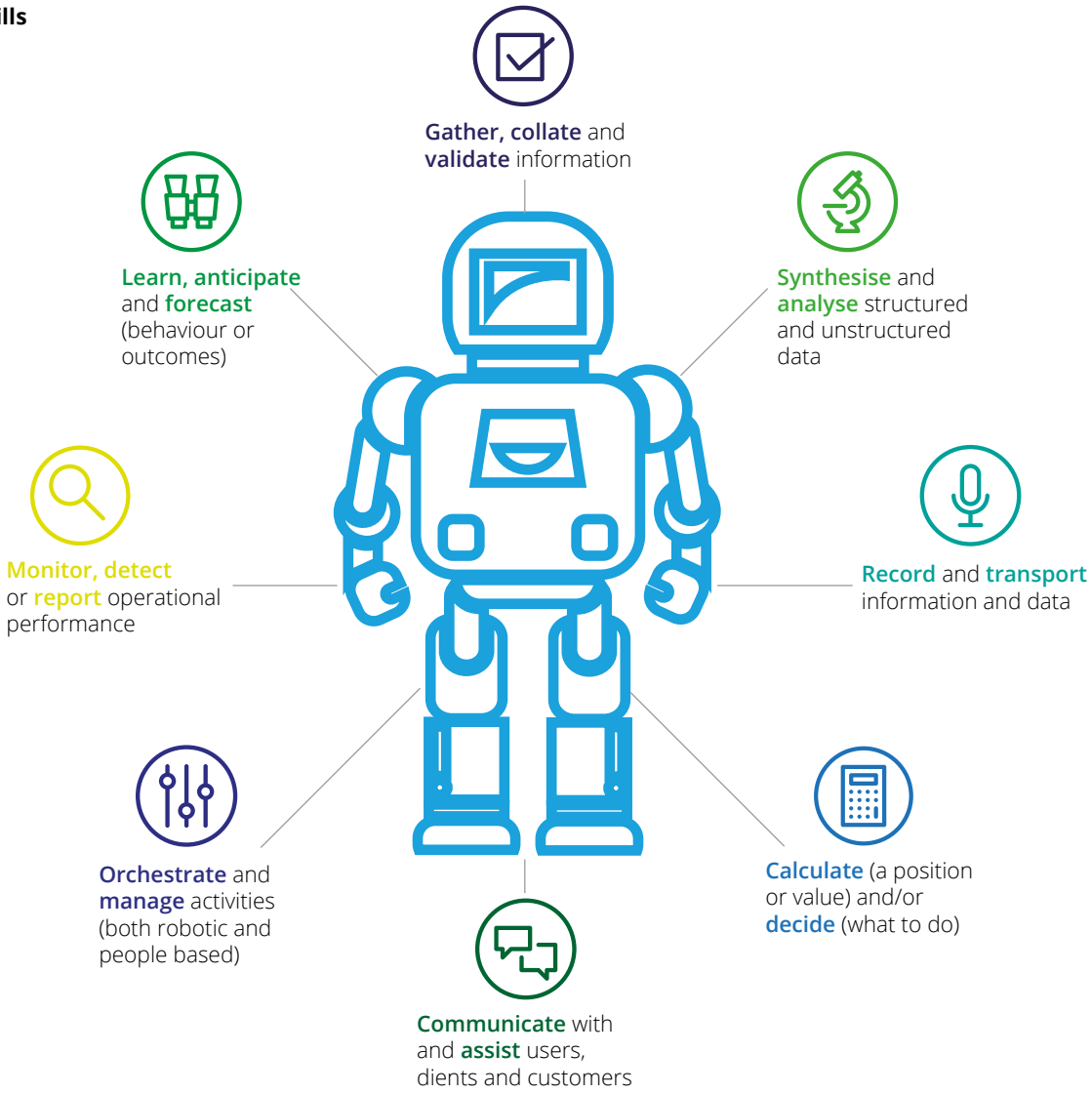
Robotics skills



Blockchain explained
The World Economic Forum has forecast that by 2025, at least 10 percent of global GDP will be stored on blockchain platforms. A blockchain is a distributed database for recording transactions where every participant on the network shares a copy of each transaction. By design, blockchain doesn't need a centralized trusted authority to validate transactions. A blockchain stores data in "blocks," or fixed structures. A block's content typically contains a validated list of digital assets and instruction statements, such as transactions made, their amounts, and the addresses of the parties to those transactions. It uses cryptographic functions to ensure the security of its data. Many industry observers see this aspect as revolutionizing how we interact and do business. It makes trading and post-trading processes more efficient, while improving regulatory control. In addition, smart contracts are becoming a cornerstone of blockchain applications, whereby a computer program is capable of enabling two parties to conclude an agreement which is enforceable using blockchain technology. Since the terms of the agreement are stored on the blockchain, the whole process of conducting business is streamlined as the need for intermediaries and different platforms is removed.

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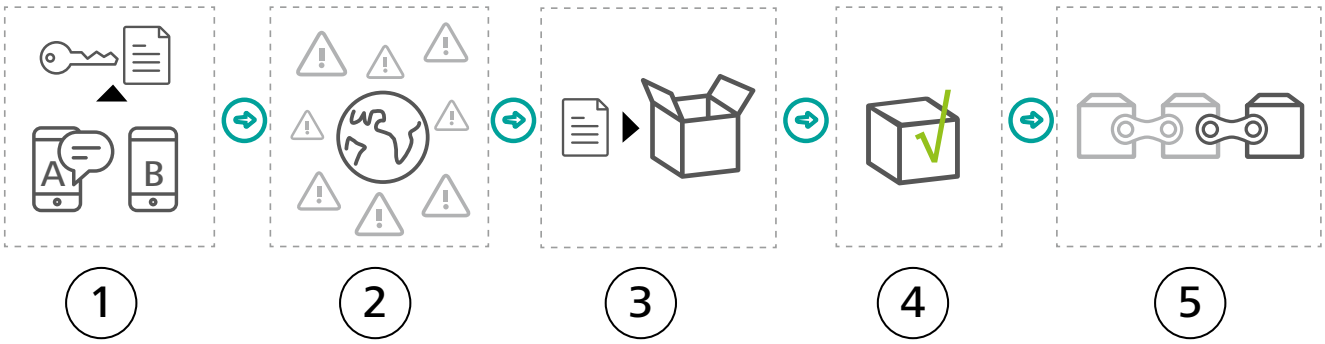

Cognitive technology explained

Born out of research into Artificial Intelligence, cognitive technology comprises several areas, including natural language processing, computer vision, speech recognition, and robotics. More advanced than bots, cognitive technology mimics human judgement in its ability to recognize handwriting, identify images, and use natural language processing to interpret information. Machine learning capability allows these tools to improve over time and has been the foundation of the rapid advance of robo advisers in the investment management sector.

Though not yet as mature as RPA, Deloitte believes cognitive technology has huge transformational potential. An important emerging trend is where enterprises are starting to employ RPA together with cognitive technologies such as speech recognition, natural language processing, and machine learning to automate perceptual and judgment-based tasks, which were traditionally performed by humans. The uses of AI are potentially limitless, but the tools are also more expensive to deploy than RPA tools and therefore will have a longer implementation timeline.

- Cognitive tools can drive value by improving complex, non-routine tasks requiring an element of judgment and learning
- These tools are rapidly improving in capability, though still in a nascent stage of development
- They are best deployed for narrow, specific business purposes

Currently Bank of New York Mellon uses robots to perform many of its trade settlement and data reconciliation functions.[1]

Impact, challenges and risks

RPA

Deloitte believes RPA will be the first of the disruptive technologies to truly affect the asset servicing market in the immediate term. RPA tools to automate the processing of trade instructions alone have the potential to create significant value for any asset servicer. In addition, benefits also include identifying revenue leakage where invoicing processes were not aligned with price points for fund accounting and custody. Currently BNYM uses robots to perform many of its trade settlement and data reconciliation functions.

India is one of the locations most affected by disruptive technology, as it's where many of the large global asset servicers have significant operations employing thousands as a result of the large scale offshoring initiatives over the last decade. The tasks and processes that have been offshored were identified, documented, and transferred—making them ripe for rapid automation there. Some of those leading asset servicers have already started deploying RPA on a large scale to handle high-volume repeat tasks, and India's banking and financial services sector is a popular location for these early-stage exercises. ANZ Bank's India centers have already successfully deployed 800+ robots within their organization, with plans to deploy a further 250 in the coming year.

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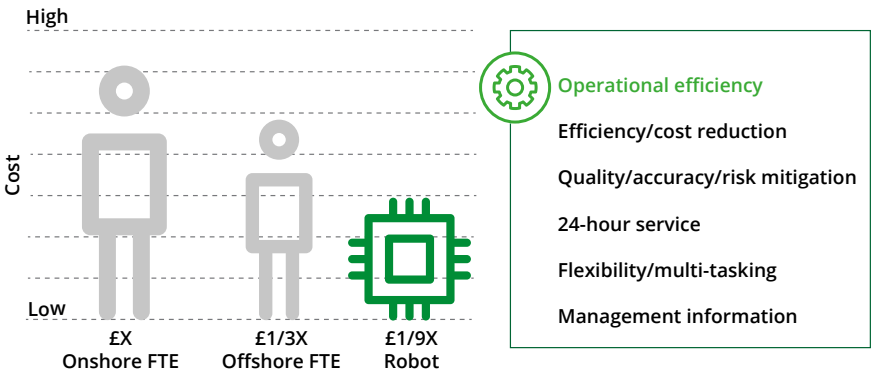

Source: Deloitte analysis

1 http://www.americanbanker.com/news/bank-technology/how-bny-mellon-became-a-pioneer-in-bots-1090969-1.html

Automation is expected to be fully embedded in asset servicing within five years. Sridhar Rajan, banking and securities partner in Deloitte New York, believes that automation won't have replaced people entirely but it will have supplanted some roles. In addition, he foresees automation reducing the headcount by between 60 and 70 percent, leaving FTEs to focus on the last 30-40 percent of the task—a custodian's workforce therefore becomes focused on real exceptions that these tools cannot solve, and start to focus more on real risk. The range of cost savings varies widely but indications suggest an average of 30-40 percent is achievable, however it is important to note that cost savings should not be the sole measure of success.

Blockchain

Applied to asset servicing, blockchain would result in a completely redesigned value chain. Lory Kehoe, director and head of Deloitte's EMEA Blockchain Development Centre in Dublin believes that blockchain may eventually go so far as to eliminate the requirement for large parts of today's trade processing and reconciliations operations. If funds are selling directly to investors and this is recorded on the blockchain, it may also remove the need for the transfer agent to monitor subscriptions and keep a share register of participants in the fund, further streamlining the entire value chain.

The function of a custodian is to safe-keep securities and make sure they are assigned to an owner. "Tomorrow, if that relationship is on the blockchain and has that immutability, and all the transactions are on the blockchain, then that gives you much of the same value as a custodian gives today from an ownership point of view. That piece of their business can be replaced by a blockchain solution," says Eric Piscini, Deloitte Consulting Principal in the US and Deloitte's global blockchain lead.

Whereas RPA can be bolted onto existing technology platforms, blockchain represents a more fundamental, transformational change to asset servicers' IT infrastructure. Mark Heaton, senior manager at Deloitte UK, likens it to "open heart surgery."

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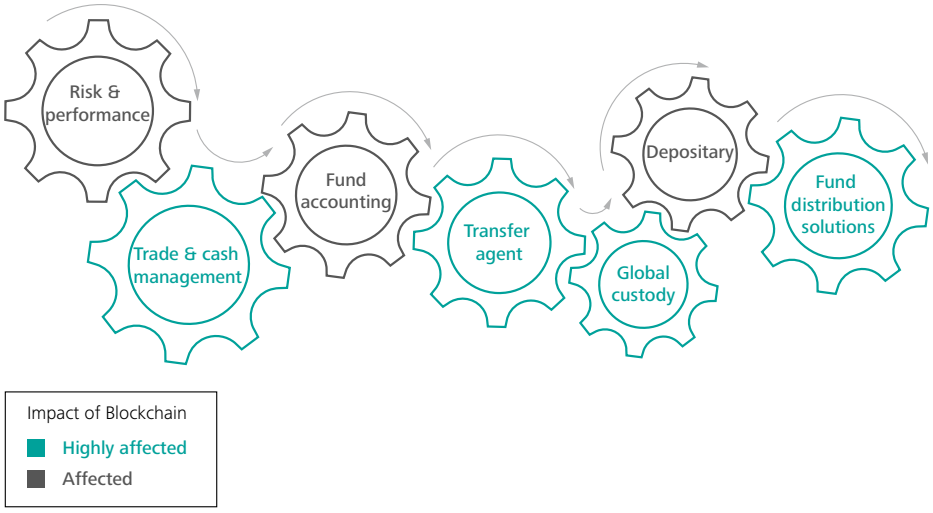

Debate rages over blockchain's readiness for the kind of wide-scale adoption that asset servicers need. Skeptics say the technology has yet to be proven at anything other than lab scale; right now the bitcoin blockchain can currently handle around five to 25 transactions per second which isn't sufficiently fast for what financial service providers need. There are also concerns around anonymity and aggregation: blockchain potentially discloses sensitive information regarding nominee accounts for example, which could lead to confidential information being leaked into the market.

Yet, Benjamin Collette, partner and leader of strategy, regulatory, and corporate finance at Deloitte Luxembourg, expects investors to be the principal beneficiaries of savings resulting from blockchain, with a smaller amount going to the service providers. "Most of the costs will be reduced because automation will streamline the older processing costs and cash settlement value chain, which will result in massive cost savings to the client. We will see the ongoing charges within funds going down dramatically. I think there will be half a billion dollars of savings directly as a result and if you include the potential blockchain impact, you could double or triple that."

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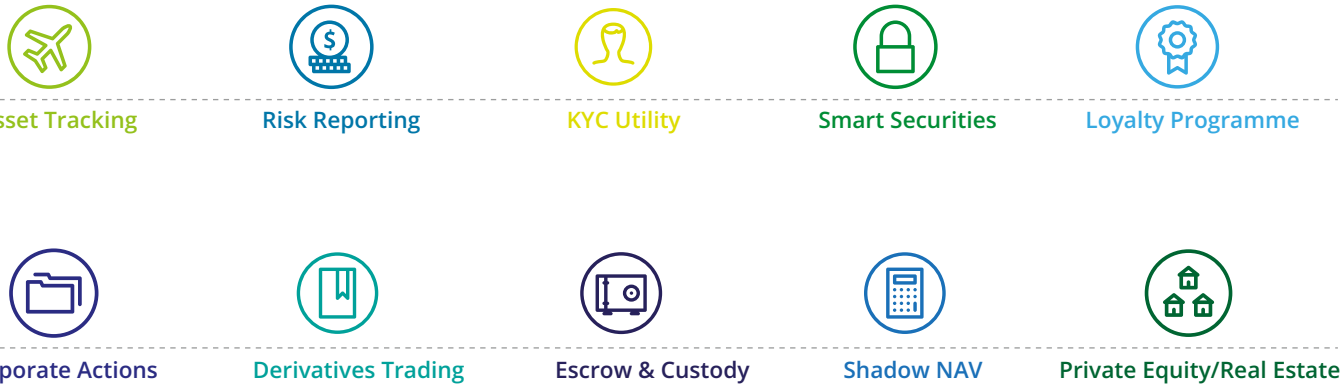
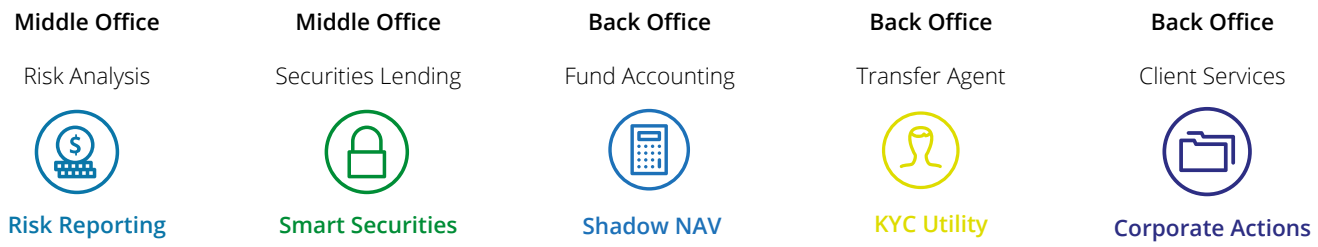
Asset/Investment management use cases



Asset servicing value chain



Collette expects blockchain will result in an industry that looks very different from a headcount perspective five years from now. The number of FTEs in the industry will decrease, as many manual tasks such as order processing and cash reconciliation will be encapsulated in a blockchain-like solution. However, Collette anticipates that although there will be significant job losses, there will be job creation in "satellite around the traditional asset servicers" in the form of positions required to operate and run blockchain systems that do not exist in asset servicing today.

Cognitive technology

Sridhar Rajan describes cognitive technology as a stage in a journey—an evolution of RPA seen on a continuum. "RPA is around taking functions that are automated by using software as if it was a human interacting with a machine, and joining the dots. Cognitive systems take their place at the more complex side of the journey. It has some drawbacks: whereas it's possible to walk back through a process to track an error, that's not so easy to achieve with cognitive systems," he says.

It should be noted that increased automation of tasks does not necessarily lead to loss of jobs. Workforce augmentation, rather than replacement, is more often than not the key driver. Lower FTE costs are the logical conclusion from introducing increased automation into a system, but there is increasing evidence to show that the leaders in this area have identified other benefits first. Early movers such as BPOs feared their model was threatened by RPA, so they looked at it sooner and many formed the view that the bigger benefits are increased efficiency and improved customer service. Bots improve processing quality and they enable 24/7 service—cost saving is not necessarily the number one priority.

Preparing for the wave of disruption

Five years from now, the asset servicing industry will look very different. The onward march of disruptive technology calls for a profound shift in thinking among asset servicing providers. If regulation was the driver for the past decade's activity, the next five years needs to see technology at the forefront of providers' strategic thinking.

This means scaling investment in technology and the technology organization within their business. In the age of Fintech, tomorrow's asset servicing organization will be a technology-enabled utility rather than today's service provider model. There are several core areas where service providers should direct their attention in order to stay ahead:

- Upskill senior management
- Shift hiring plans
- Recruit expertise
- Define success
- Get faster, fast
- Split divisions
- Move up the value chain

Three outcomes are emerging as possible avenues that the asset servicing industry will take over the next number of years. Scenarios A, B, and C discuss the potential impact that disruptive technology will have on the value chain of the asset servicing industry.

Conclusion

Scenario B is the most likely outcome, whereby the value chain will be disrupted but not disintegrate entirely. However, in order to capitalize on the upward growth trend and increase profits, asset servicers will need to invest in new technology to meet the needs of their evolving client base. RPA, cognitive systems, and blockchain will create an asset servicing industry that looks very different to now, but this disruption will happen in stages over the next three to five years. We anticipate a domino effect whereby asset servicers will begin implementing RPA to tackle low-level, repeatable, process-based tasks.

Scenario A

- Slow and incremental Change.
- It is thought that Blockchain is not disruptive because it's going to take time and as such cannot be classified as "disruptive".
- Improved efficiency and cost savings will be felt across the industry.
- Robots and back and middle-office worker work in unison, however robots will not entirely replace humans.

Scenario B

- The value chain will be disrupted by new technologies.
- Costs will be reduced because of streamlining the older processing costs through automation.
- New entrants to the arena such as starts ups will likely change the industry as we know it today and create a more varied and disrupted asset servicing industry.
- Back and middle– office tasks will no longer be off shored, rather taken back in-house and replaced with new technologies.
- Senior executive members possess a strong understanding of current technology developments in this area.

Scenario C

- The value chain in its current state will disintegrate.
- Significant disintermediation will occur, disrupting the foundations of Asset Servicing as it stands today.
- Wider access to funds for the man on the street and asset servicers will tap into emerging economies.
- New workforce tailored to maintaining this technology. Blockchain will replace the need for intermediaries within Asset servicing, with all service providers operating from the same distributed ledger.
- Self-sufficient investors will no longer require asset servicers to meet their investment needs, consequently Service Providers will have to enhance their offerings in order to retain clients.

They will follow this with blockchain as that technology matures. As RPA becomes embedded, it will pave the way for introducing cognitive technology and artificial intelligence that applies rules and human-like judgement to asset servicing roles.

It's always better to be the disruptor than to be disrupted. Now is the time for asset servicers to start formulating tactical and strategic plans, in order to be ready for when the technologies' tipping point arrives and the waves begin to crash down on the industry.

To the point:

- Asset Servicing is the middle and back-office services provided by an administrator or custodian. The industry employs approximately 200,000 FTE's worldwide.
- Disruptive technologies look set to have a profound impact on the Asset Servicing industry with the capability to automate and replace many of the routine, repeatable tasks undertaken by FTE's in this space.
- Deloitte have examined and assessed three disruptive technologies which we believe will have the biggest impact for our clients in the Asset Servicing industry: robotic Process Automation (RPA), Blockchain and Cognitive Learning.
- These disruptive technologies, combined, offer enormous potential for asset servicers to create efficiency, reduce risk and improve quality of service to clients. Here we describe where these impacts will be felt most, and outline actions that asset servicers can take to ensure they can ride the wave of technology disruption without being consumed under it.