Data Exception Management

Analysing the impact of automated data exception management on productivity, insight and cost

An Adox Research Ltd White Paper, commissioned by Xceptor

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Background

Many technology solutions try to answer the question “How can we build a frictionless processing environment which creates an information advantage?”

They all fall at the first hurdle: the assumption that the data is available, in the right format, at the right time, to the right consumer. The quality and availability of the right data is central to success. In financial services, there is no single end-to-end process, but there is a strong need for consistent end-to-end data:

Who is the customer? What is the product? What is the valuation? How much is this portfolio worth? What is the risk / performance of the strategy?

These core financial data sets are essential in every aspect of our industry, but data quality levels very often do not meet the standard for automated processing. If firms fix data quality (which covers content and format) at source, they can reduce data exceptions across the entire investment lifecycle. Adox Research defines data exceptions as any intervention in a data-intensive process which interferes with automated processing.

To better understand the accelerators and obstacles for financial services firms to improve their ability to manage Data Exceptions, Adox Research Ltd surveyed 90+ senior technology and data management executives with technology buying responsibility during February 2019. This research was commissioned by Xceptor and conducted by independent research specialist Adox Research Ltd. This white paper summarises the key data points and insights from that survey.

Summary and key insights:

10 years into the aftermath of the financial crisis, IT and Operations leaders at banks and asset managers are still being asked to do more with less, but all of the low hanging fruit of cost savings and productivity enhancements has long gone. Our research shows that the area of data exception management is long overdue for automation. Insufficient data quality impacts all departments, all financial data sets, and makes it difficult to meet regulatory requirements and customer expectations. There is a compelling business case for automation, which rests on three separate pillars: significant direct cost savings of up to 20%, redeployment of expensive human experts, and future-proofing of operating models and IT capabilities. While these benefits are not disputed, firms are not sure if they can find the right expertise internally and in the vendor market to help them mitigate the risks of implementing automated data exception management solutions. The key insights derived from this primary research are summarised in the table in Figure 1.

IT's devil's bargain: do more with less AND prepare to be "alt-sourced"	Data exceptions are an undiagnosed, unsolved and widespread problem	Data exceptions impact high-value data for risk, regulation and performance
Automating data exceptions will reduce costs by up to 20%	KEY FINDINGS	Data exceptions impact customer service and compliance as much as operations
Firms are unsure where to turn for data exception expertise	Opportunity cost = the core business case for automating data exceptions	Fintech innovation really needs data quality foundations

Figure 1. Summary table of key findings

IT's devil's bargain: do more with less AND prepare to be "alt-sourced"

Pressure to cut costs and innovate at the same time is not new to IT leaders in financial services, but the cumulative effect of a decade of 'more with less' is hard to underestimate. To manage is to make choices, and we wanted to better understand the trade-offs firms are making as they evaluate investments in data exception management in the context of big-picture business changes and evolving operating models. Margin compression, scalability, increased regulatory demands, and digital transformation objectives are sending a few simple messages to IT and operations professionals:

- Technology as a necessary evil or operational inevitability is out
- Technology as an enabler for differentiated insight is in
- In-house technology investment is the proverbial melting ice cube: it will only get smaller

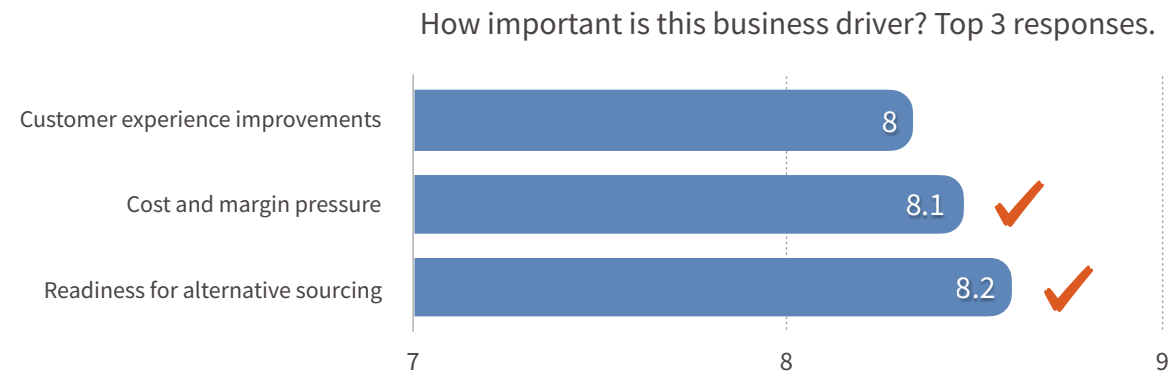

Figure 2. Business drivers impacting overall IT strategy

Our questions covered six of the most important business drivers. The results in figure 2 speak for themselves: the likely need to change operating and technology models scores highest, just above the need to reduce costs/preserve margins. Firms are under pressure to change long-established IT and Ops practices, and find ways to deliver now - while preparing for alternative sourcing of IT capabilities in the future. It truly is a devil's bargain: do more with less, and prepare to be replaced/outsourced/alt-sourced.

This pressure means that technology leaders are always looking for opportunities to make incremental or transformational gains, and one such area is the focus of our research - the automation of data exception management.

Data exception management is the industry's largest undiagnosed, unsolved and widespread problem

Why are data exceptions such a rich target for automation, and the ensuing insight and efficiency gains? More than any other data set, financial data needs to meet a number of quality criteria before it becomes useful and useable. Those criteria range from the basic to the more esoteric, and can be grouped in four categories. A first category is Completeness and Timeliness: did we receive the data on time, and did we receive all of it? A second category is Consistency and Consensus: does the data meet internal and external measures of its real-world accuracy, and is it agreed by all parties in the data exchange? A third category can be labelled Formats and Feeds: is the data accessible in a structured format which can be automatically loaded and parsed by business applications? A fourth and final category is Calculation and Context: does the data require additional processing and human judgement before it can be added to an automated workflow?

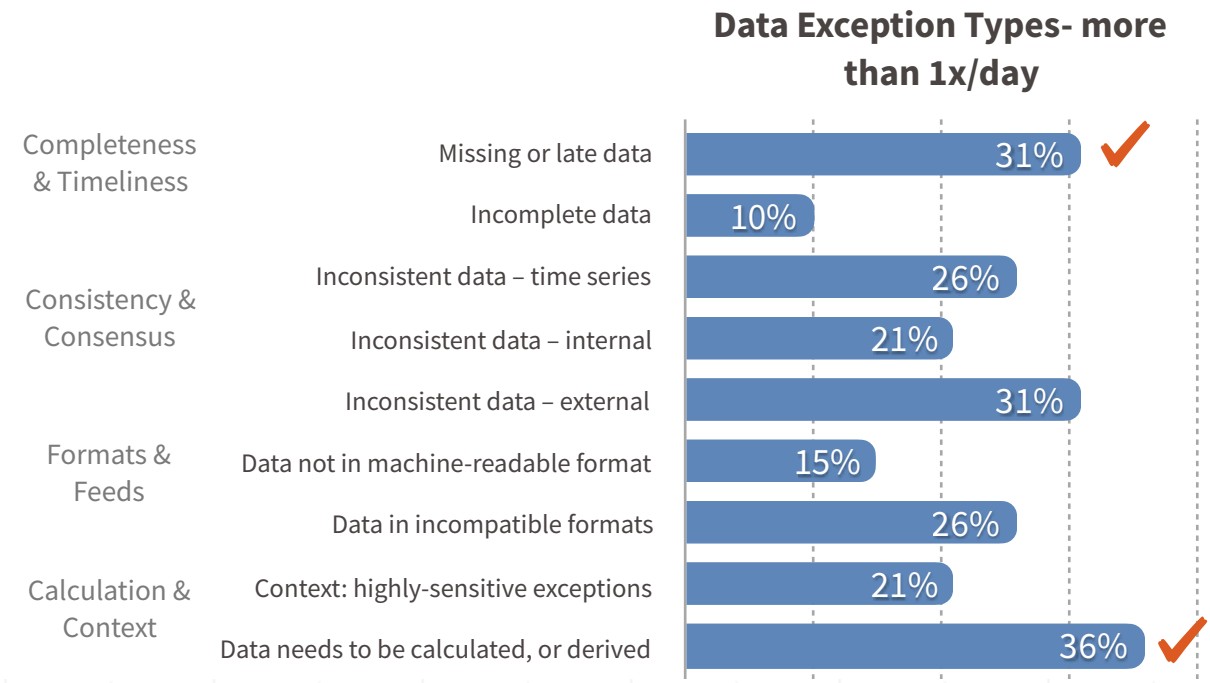

Figure 3. Frequency of the most common types of data exceptions

The existence of these data quality problems is not up for debate, but we wanted to get a better picture of the size of the data exception problem by asking more granular questions:

> *How often does the automation of data-intensive processes break down? How often do human experts need to step in with manual edits, re-keys, validations, reconciliations and other forms of interruptions? What is the mix of low-value VS high-judgment exception tasks?*

Our survey participants were asked how often these types of problem occur: more than once a day, at least once a week, at least once a month, or almost never. Three observations stand out from these results, summarised in figure 3:

1. Not getting the right data on time is a massive problem for a third of firms

Missing or late data is a multiple daily challenge for 31% of firms. This is clearly a case of falling at the first hurdle. Banks and asset managers need constant updates to market and reference data to be able to deliver their most basic services: making investment and trading decisions, pricing securities, valuing portfolios, measuring risk and performance, and a host of other core functions. Without on-time and complete delivery of this data, business applications cannot be updated, and firms will miss trading opportunities, mis-price assets and liabilities, and deliver low-quality customer experiences.

2. Complex derived data is creating the highest volume of exceptions

While the basics of data delivery are a challenge, the need to manage derived, manufactured or calculated data is creating by far the highest number of exceptions on a daily basis. For more than a third of firms, the need to manually intervene in data management for risk, pricing and performance measurement is a constant struggle. This shows that data exceptions are not just simple data delivery and middleware problems: the most valuable and impactful business functions in any bank or asset manager depend on the firm's ability to create unique and firm-specific ways of measuring asset prices and risk. These data-intensive processes tell risk managers, traders and portfolio managers

where there is risk, opportunity or differentiation. The impact on all measures of employee productivity is obvious.

3. No one is doing it right - and firms know they have too many data exceptions across all these categories

Almost no firms are able to avoid these data exception challenges. Only one type of data exception ('Incompatible formats") was reported to occur 'almost never' by just 10% of firms. That low mark is the 'pinnacle' of achievement for automated data exception management. All other types of data exception are more common for more firms. This shows us that the challenge of data exception management is widespread and pervasive: it covers all types of firms, and all types of data exceptions. Our industry cannot credibly maintain that this is not a problem - and conversely a huge opportunity to increase automation and efficiency.

That opportunity extends across multiple vectors: business functions across front, middle, and back offices, as well as the mission-critical financial data sets that power the industry. It is no longer simply an operational or back office concern - new powerful stakeholders in customer-facing, compliance and other front-line functions are targeting data exception management as the missing link to better service, reduced regulatory risk and more flexible attitudes to forward-looking technology and operating models.

Data Exceptions impact customer service and compliance as much as operations

In the recent past (and ongoing present…) most of the debate around improved data management has been driven by operations and technology executives. Historically these departments have born the brunt of the data management burden, spending resources on technologies, development efforts, and human expertise to 'own data management'. Usually that is because no one else will.

This has created a Catch-22 challenge for firms that want to challenge the status quo: IT and operations executives understand the complexity and importance of data exception management, but they often lack the visibility , corporate clout and budget to influence strategic decisions. Those tend to be driven by Sales, Investment & Trading, and Risk groups - who have effectively passed the buck to Ops & IT when it comes to data management.

Our data in figure 4 shows that picture is changing. When we asked survey participants where in the investment lifecycle better data exception management would have the biggest impact, the highest scoring areas included client-facing functions (such as on-boarding, customer support, sales), as well as oversight and compliance (which covers risk management, regulatory reporting and other control functions). Operations in fact scored lowest across our five trade lifecycle segments, while technology or enterprise IT was level with the top two segment.

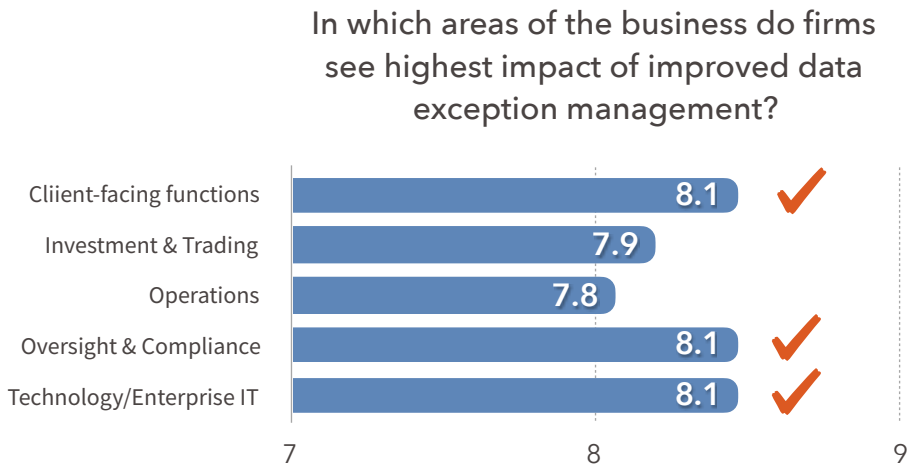

Figure 4. Business areas most likely to benefit from better data exception management

This suggests data exception management is not primarily an Operations/back office challenge - Customer Service and Regulatory Compliance are key targets for better data exception management, and firms are targeting technology, not operations to help them achieve those automation goals. But the reach and impact of low quality data is not just

measured across departments and functions, it is also present in all categories of financial data, from security identifiers, to pricing, risk and performance data.

Data Exceptions impact high-value data for risk, regulation and performance

So far, we have tried to get a better picture of which data exceptions are most common - and where in the lifecycle data quality has the biggest impact. There is also some very interesting data from our question on specific data sets, as shown in figure 5. Typically, data quality and exception management efforts have focused on core reference data projects: security master databases, customer and counterparts IDs, and related data sets such as classifiers, identifiers, and security pricing. These data sets are at the bottom of the data pyramid - they are used throughout every part of the investment and trading lifecycle, and without them none of the core systems and applications in any bank or asset management firm can operate.

It also means that those core data projects loom large in firms' perceptions of the data sets that are most important to them - the focus on monolithic security master or pricing solutions has often been at the expense of more business-relevant and higher-value data sets. In order to find out if that is still the case, we asked firms which data sets were most impacted by low data quality, and therefore would benefit most from automated exception management.

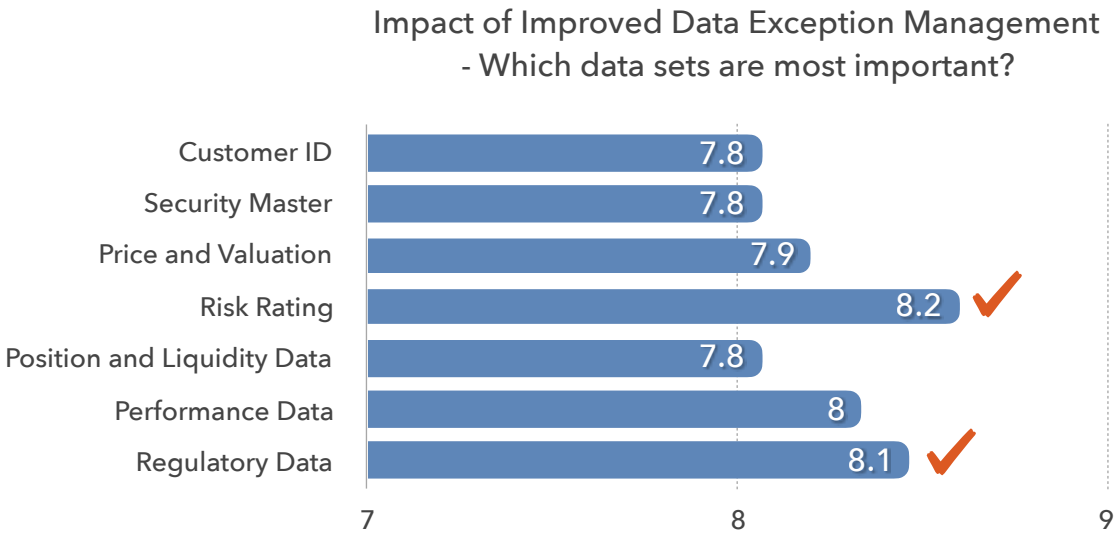

Figure 5. Data sets most likely to benefit from better data exception management

The results show that data exception management is no longer just a 'vanilla' data problem - survey participants are reporting that high-value data for risk, regulation and performance is where the biggest benefits can be achieved. This is good news for executives who are trying to build stronger business cases for data exception management, and shows that the impact zone for investments is no longer the predictable and unexciting world of operations, IT, and security master projects. Risk and trading desks are now key stakeholders, and they are focused on high-value and differentiated data sets.

So far we have seen the impact of data exceptions runs wide and deep, and our next data points pivot towards answering the crucial questions on the benefits of automating these exceptions, and how firms are building the business case for investment in technology solutions.

Automating data exceptions will reduce costs by up to 20%

From these survey results, we have seen evidence that firms know they have an unmanaged data exception management problem. They understand the breadth and depth of the challenge across all exception types, across multiple departments, and across vanilla and complex data sets. So why not act and address this challenge? What is holding banks and asset managers back from building a solid business case?

First we wanted to get some hard data on the direct cost savings: what level of cost reduction (if any) do firms expect to realise from improved data exception management? The results are consistent with participants' view of the size of the challenge: getting this right could have a very high impact on the bottom line. Direct transaction processing costs are the most straightforward measure of cost efficiency - and we asked our participating executives to estimate the cost savings they expect to make if they automate data exception management across all segments of the trade lifecycle.

The results are extraordinary: doing data exception management right will yield significant returns - more than a third of firms expect to reduce costs by up to 20%, and close to two thirds expect to save between 5 and 20% per transaction.

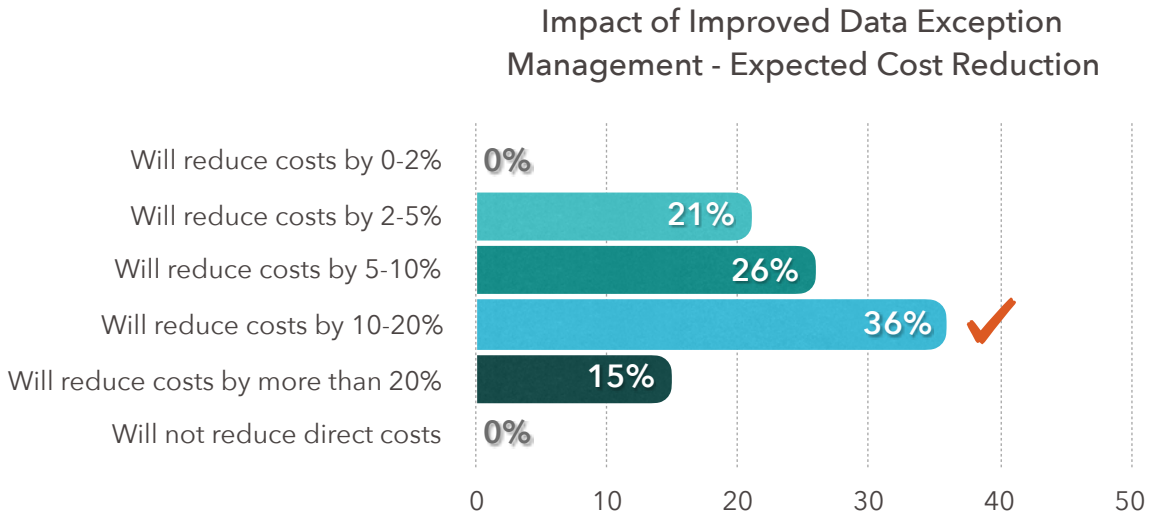

Figure 6. Expected cost saving from automation of data exceptions across the trade lifecycle

While that is an impressive number, it is worth bearing in mind this assumes automation across all exception types, data sets and business functions. The more likely implementation scenarios would be incremental, targeting a specific subset of the overall data exception universe. That does not take away from the obvious conclusion that automation of data exception management promises very high potential savings.

Reducing opportunity cost is the core business case driver for automating data exceptions

If the expectations for cost reduction are so robust, why aren't firms getting off the fence? Why are they not (yet) acting on their own insight into the size of the data exception challenge, and the upside of solving this quintessentially hard-to-solve problem? We wanted to better understand what would make firms move forward, and approve

increased investment in automating data exception management. We identified 8 possible triggers, from cost to scalability, digital transformation, productivity, scalability and the others you can see on figure n. Each of these positive drivers is worth spending some time on - but we will focus on the two highest scoring potential triggers.

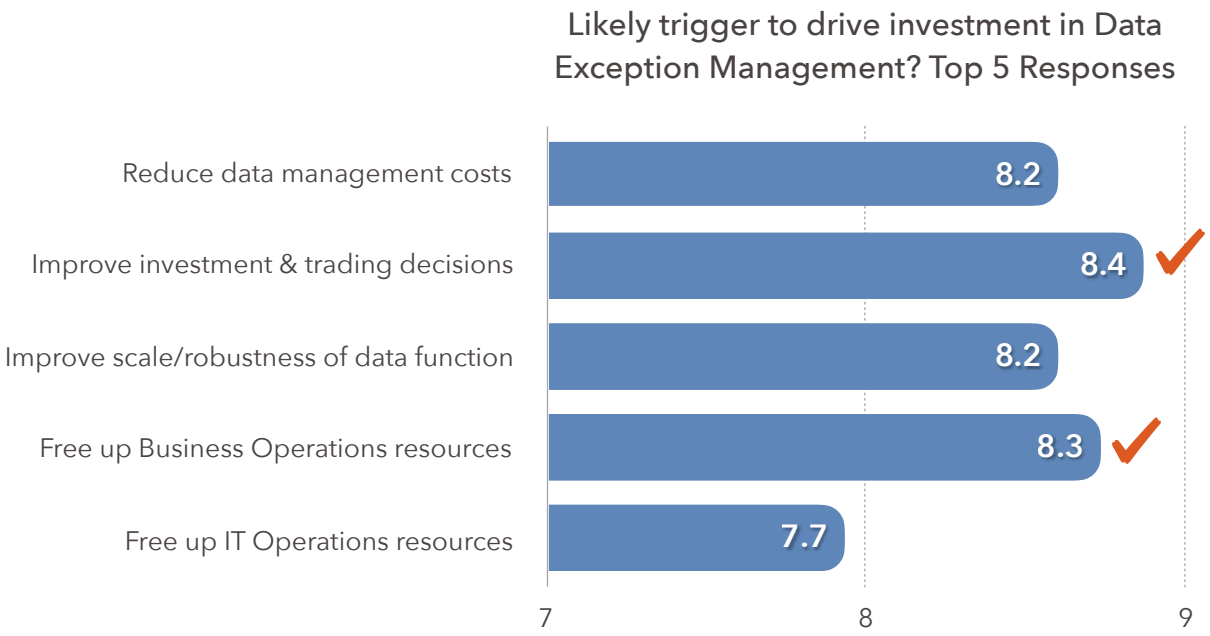

Figure 7. Triggers for increased investment in data exception management

Business value is a key driver - allowing firms to focus on core competencies and higher quality decisions in investment and trading, as well as reducing the opportunity cost of manual exception management. In fact, better decision support for trading and investment functions was the highest scoring trigger - we are far away from the traditional operational efficiency plays of the past. Instead, firms are focusing on core competencies: banks and asset managers are not in the business of technology or data management. They need high quality data to make better decisions on stock selection, trade timing, risk and performance goals.

That same focus on value is clear in the second highest score for “Free up Business Operations resources”. Using expensive human expertise to solve data exception problems is not a smart use of capital, and can leave staff demoralised and unproductive as they are

forced to deal with low-value data quality challenges instead of a more rewarding focus on what matters to the bank. The time and effort spent by trading, risk and operations professionals should be spent on ways to gain better insight into trading opportunities, customer service enhancements, and ongoing digital transformation projects. The direct cost benefit may be important, but the opportunity cost revealed by these numbers is equally eye-opening.

Our industry is ready to move, and cognisant of the potential rewards - so why have firms not moved more aggressively to automate?

Firms are unsure where to turn for data exception expertise

Our industry knows it has data exception problem. We know there are major benefits to automation, and that we can save money and reduce opportunity costs by doing so. So again - why have we not done more? What is holding firms back? In order to better understand the perceived obstacles to automation of data exception management, we provided survey participants with a menu of potential risks and concerns, factors in their de facto decision to date to do nothing, or to delay investment.

It turns out that firms may want to act, but are not sure if the right help is available, from either the vendor community or their in-house experts. The suspicion that there are no ready-to-go vendor solutions to help automate data exceptions is the highest-scoring risk factor or obstacle as shown in figure 8. Firms are unsure about or unaware of any vendor-provided solutions or services, so there is no easy or proven path to adoption of a data exception management platform or service. That in turn means firms feel they have no option but to do it themselves.

And immediately - that is where they hit a second road block: firms report that they lack the skills or expertise internally to develop or deploy an in-house solution (it is the second

highest obstacle reported). The third ranked obstacle of legacy tech integration is an extension of those two concerns. In the absence of proven or trusted solutions (in-house or external), firms know they will have a very hard time integrating any new data quality projects into their legacy technology platforms. In summary - firms want to act, but are not sure they can find the right help from tech partners and internal teams, and - as always- are worried about integrating legacy tech.

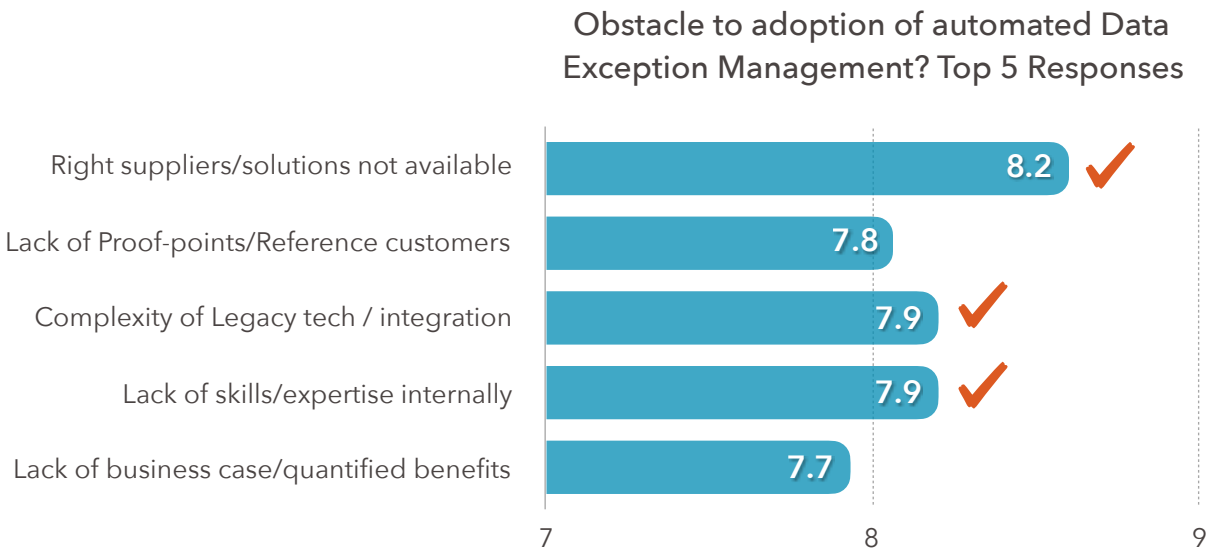

Figure 8. Obstacles to automation of data exception management

The true challenge for IT leaders is not just how to manage legacy tech more competently: they are being asked to deliver new capabilities and invest in new infrastructure and business solutions - increasingly under the 'fintech' banner, which promises innovation without the organisational constraints of traditional banking technology approaches.

Fintech innovation needs data quality foundations

The fatal flaw for just about every technology-led innovation in financial services is the assumption that data is available, and of high quality. Without basic data foundations, it is very difficult for new technologies to be implemented in a useful and usable way. While there may be a niche opportunity for fuzzy, sentiment-analysis type tech in financial services, the bulk of our industry still runs on structured, normalised, verified data - and

there have historically not been any technology-driven shortcuts to achieving those data quality standards.

To find out how and if data management improvements are linked to ongoing investments in technology, we asked survey participants to rank a list of tech innovations. Which ones are most relevant for or co-dependent on improved data quality?

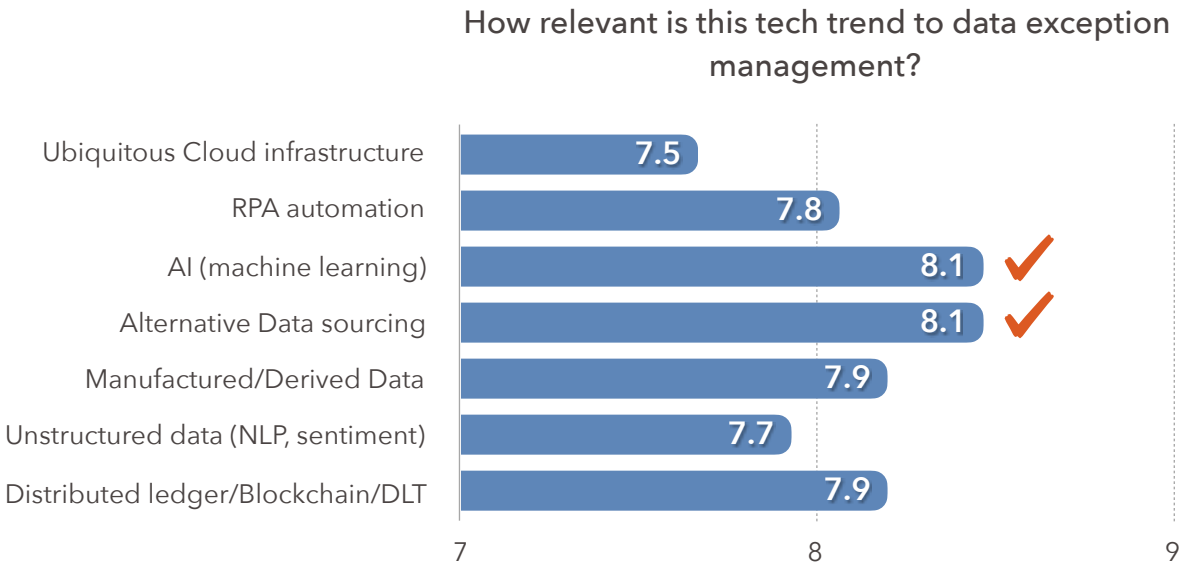

Figure 9. Technology relevance to data exception management objectives

While the distribution of the results is quite narrow, the two highest scoring tech trends are Artificial Intelligence and the use of Alternative Data. They are closely linked: the promise of alternative data sources (sensor, satellite, footfall, etc) to deliver actionable insights depends on Artificial Intelligence capabilities and vice versa. Both are also relevant to the most pressing business challenges for banks and managers: differentiation and profitability. Differentiated investment products need differentiated analytics and insight, and automation of highly-compensated analytical tasks will help reduce margin pressure. The relevance of data quality and data exception management is clear: they directly underpin new business needs in Artificial Intelligence and Alternative Data - and support cutting-edge tech initiatives.

About this Research Paper

Survey Demographics

Adox Research Ltd surveyed 90+ senior technology and data management executives with technology buying responsibility during February 2019. This research was commissioned by Xceptor and conducted by independent research specialist Adox Research Ltd.

- Geographical breakdown: North America (USA, CA) 44%, UK 12%, EU (non-UK) 27%, APAC 10%, SA 5%.
- Segment Breakdown: Universal Bank 45%, Investment Bank-CIB 11%, Asset Manager 38%, Custodian 3%.

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