

AI: The Future of Content Management in Financial Services

Introduction – The Problem

When thinking of the myriad challenges banks face in their day-to-day operation, few might pinpoint the management, collation, and analysis of content as a major struggle. Yet dealing with it has been an onerous task for financial institutions for decades.

The repository for the millions of documents banks deal with has changed from a dusty records room in the basement of a skyscraper to a humming datacentre (most likely still in the basement).

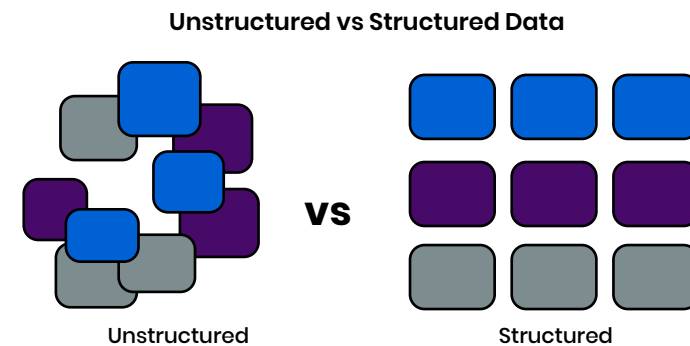
Digital transformation as a holistic approach to business has remained at the top of the list of every CEO’s wish list and the numbers speak for themselves. Operating expenses for processing divisions can be reduced by as much as 25% by adopting digital approaches.¹

“The paperless model has a range of benefits, most notably it delivers speed, consistency and a better risk management system. However, the key issue financial institutions need to be mindful of is how this is integrated with the customer journey. If an institution tries to digitise too fast and builds a system with flaws, this will have a detrimental impact on the overall customer journey and potentially lead to major problems.



Chirag Shah, CEO, Nucleus Commercial Finance

Yet C-level executives seeking to digitise their bank from top to bottom are at risk of missing the consequences of a gung-ho approach to transformation: the management of a cascade of new digital content, which risks banks becoming bogged down in a sea of unstructured data.



Documents in an electronic format can form a key part of a slew of business processes. These range from customer service, sales, and operations to payroll, legal, and marketing. All these departments and functions can end up sat within their own siloes across the business. Across financial services, there are on average nine information siloes per organisation.² In many cases firms are using different software suites for the same task in different divisions. On top of that, 58% store unstructured data within the proprietary software, rather than in a central database or management system.³

¹ https://www2.deloitte.com/content/dam/Deloitte/za/Documents/financial-services/ZA_ItsTimeToGoPaperless_24042014.pdf

² <https://www.nuxeo.com/media-center/ai-finserv/>

³ <https://info.aiim.org/state-of-the-industry-content-services>

This leads to a disconnection between processes, a build-up of slow back-office functions that can lead to delays, mismanaged documents, and issues bounced around an organisation. When applied to the processing of documents and content, this could involve the editing of 1000s of fields in customer-submitted documents and files to meet industry requirements.

The modern consumer, and the modern client, is looking for immediate access, available on any device, and delivered in a contextual manner to help achieve goals. It goes without saying that all those aspects should integrate alongside solid security and governance.

Financial institutions must seek ways to better streamline the way they process incoming data, and how existing content processes can be improved, ready for the adoption of deeper analytical technology. An organisation can lay the groundwork for real progress through the digital conversion and preparation of its content, retrofitted to interact with technology which is set to change the way the industry operates: AI and machine learning.

The Solution – AI for Content Management

The deployment of artificial intelligence and machine learning enables the processing of content and data at human-like ability combined with unprecedented scale. The automated extraction of critical data from unstructured sources can dramatically reduce workload in the back office.

“ In terms of documentation, much progress has been made in robotics processes which allow the classifying financial documents and the identification of keywords for auditing or comparing legal contracts to be automated. However, there is still some way to go in implementing the automated improvements for all of these administrative processes.

In the last 4 years we have implemented numerous text mining algorithms on transcribed [customer] comments to improve the client relationship and experience. Beyond text analysis, we believe that the interpretation of the voice without transcriptions is key, with all the additional richness that it contributes in terms of the client’s sentiment.



Christina Lázaro, head of CaixaBank Business Intelligence

“When you’re trying to personalise the journey for a customer, you really have to understand that it’s not just the front office and the customer-facing platforms that need customising. The hours and days that employees use in the back office which are critical to AML, risk, and fraud, can all be reduced through AI.

How can I help a customer that wants a statement without going to an employee? Or wants a quote without waiting to be connected to a human? How do I provide a settlement quickly? AI is driving all of this and more.



Haseeb Qureshi, COO, Conister Bank

Analysis

AI is capable of analysing tone and sentiment of content leveraging natural language processing, as well as extract keywords, categorisation, and more. Images can be tagged and characterised, enriched with metadata and formed into groups for easy analysis. That indexed data can then be passed to similarly integrated models to initiate new processes.

Insurance is a great example of this in action. A customer claims flood damage on a home and submits a series of images and videos of their home. The model analyses and tags these as examples of major damage. Later, those indexed images are utilised as comparative data for an entirely different customer and may expedite their claims process.

When it comes to content management, AI tools can be crucial for the conversion of non-indexable information into usable data. Graphics and images stored as TIFF files can be switched into more usable PDF files through the implementation of optical character recognition to map text to the image and then integrate it with a firm’s existing content platform to be searched later.

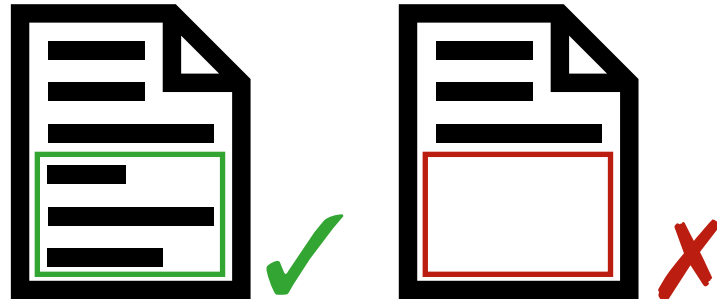
Automation

AI and machine learning, at its base level, is also capable of streamlining critical business functions and processes through analysis and insight generation. Banks and financial institutions process millions of paper documents every year, the majority of which are usually handwritten. Checking these has traditionally been a laborious and expensive process.

Machine learning models can convert formerly manual work and cut time spent by employees. Likewise, a firm can give itself a real headstart through the digitisation of its content ready to interact with AI and machine learning software. This conversion of paper forms into digital documents enables faster verification and validation of data, and easier processing.

For example, automated models can also be used to identify what is missing from the documents it processes. Validation and exception management, which used to involve a human agent looking over every form, is streamlined by a machine model trained using complete documents as models. When a customer form is missing crucial information, it can be pushed to a human representative, or back to the customer for completion.

Document analysis



Document analysis can spot missing information in thousands of data points

“ CaixaBank developed a machine learning-based system to manage its over €450 million annual direct debit payments. Previously, when a bill was sent to an account with insufficient funds, a human advisor would analyse the case and decide whether to allow, reject, or postpone the debit. Now, by using an AI system to make these decisions, the number of human hours required to manage client risk are significantly reduced.

Christina Lázaro, CaixaBank

Insight

A core use case for AI and automation within any organisation is the ability to derive value from interconnected data, often in places a human wouldn't make the connection. In the financial services sector pattern recognition can mean the difference when it comes to detecting fraud or money laundering.

AI can help detect fraud through the comparison of millions of data points. It could identify applications with matching information, or an insurance claim with the same photos of

damage, years apart, and flag them for further investigation. Could a human do the same?

On top of its use in protection against fraud, AI can provide actionable insights for both employees and customers. A well-drilled machine learning model can use a database of application processing times to give users a down-to-the-day estimate of when the onboarding process for a bank may complete, or when submitted documents will be processed. Both examples demonstrate how an AI system can utilise existing data within a firm to dramatically increase value.

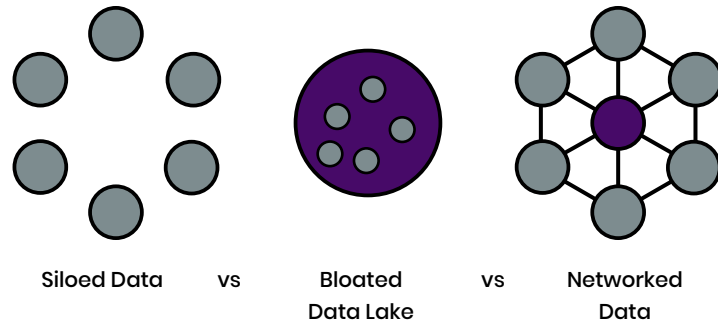
Connection

A single firm may use a cloud storage platform like Google Drive, Microsoft SharePoint, or OneDrive, or all three could be in use interchangeably across different aspects of the organisation. Collaboration tools like Slack or Microsoft Teams come into the mix, while marketing teams may use an Adobe suite, and salespeople rely on Salesforce.

Each of these creates its own information silo. Financial services workers are losing 52 minutes every day looking for information across disparate business siloes, resulting in a massive loss of productivity.⁴ A solution to this issue lies in consolidation, a creation of a single repository of data. Yet the cascade of new tools, solutions, and software risks adding to an already bloated mass of data. Financial institutions require a solution which can standardise the storage of data, but also federate search and access to disparate information sources from a single access point. This is where a content services platform comes into play.

⁴ https://www.nuxeo.com/resources/finserv-future/?utm_source=fintechfutures&utm_medium=paper

Connected Data Siloes



Data locked away in silos is often unstructured and uncategorised. It is important to train and deploy a machine learning model capable of indexing the disparate collections of data. This way you don't create a behemoth data lake filled with every type of content submitted to the organisation, but a network interconnected and entwined – searchable, readable, and contextual – enabling an organisation to find any needles hidden in the data haystack with ease.

Implementation

The bottom line is that access to and delivery of content really defines your overall experience, both from a customer perspective, and from a user perspective. An effective deployment of AI can be crucial.

Selecting a strategy can be a daunting one. Risks remain that an “out of the box” solution could be anything but, requiring tinkering and customisation before real insights can be generated from the models. It is important that stakeholders in the organisation are prepared to learn, experiment with, and iterate on, the systems they select.



Accuracy and speed are crucial. In an increasingly digital world, customers want to be able to access tailored decisions within minutes, and it is the power of AI that can enable them to do this. We're already seeing a large number of players in the market embracing third-party integrations to enable them to deliver better customer experiences.

Chirag Shah, Nucleus Commercial Finance

Going it Alone

In an ideal world (also known as a world without budget constraints) every institution would likely plan to develop, tailor, and deploy their own AI solution. While CEOs may be scrambling to get one over on the competition, they must take a step back when deciding to ignore the market: can I go it alone?

In-house development allows for full control and integration with your critical and core systems, with a tailored fit hard to find the market. But is the grass greener? It's worth looking at where the benefits lie. Is it with the engineers and developers, who get to use your dime to work on cutting edge technology? Or is it with the product side, demanding the fastest possible solution with no mind to cost?

Finding the right people is another consideration. Not without reason has the job market for AI been called a “talent war” by even the largest players in the industry. Does your organisation have the vision and the pull to attract the best talent?

Timelines come next. It takes a long time to build a workable AI solution, and during those months of waiting the costs can

skyrocket, especially if yours is an organisation dealing with billions of data points.

The investment could be worth it if yours is a firm where small, critical changes to existing processes can add a tens of millions to the bottom line. If not, a company with good vendor selection management can tap a market featuring tailor-made solutions with agile deployment to give a much-needed boost over the competition.

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If you look at an off the shelf solution you should very much look for customisation. There needs to be a collaborative workspace in which you can drag and drop and tailor the system to your needs.

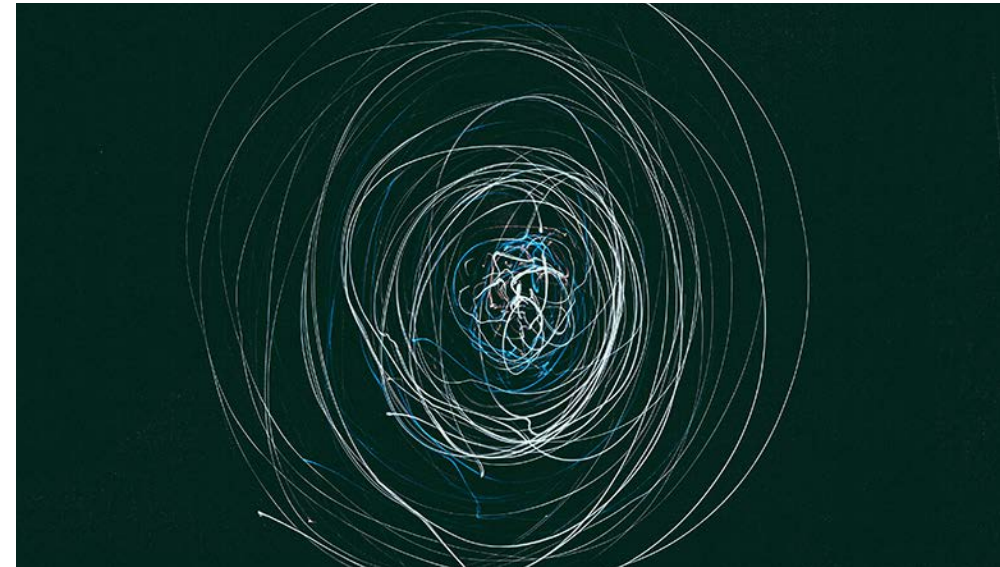
At the same time, you need to make sure you do your research, as there are a lot of good systems out there. You must plan the ecosystem ahead of time, rather than see AI as a “nice to have” you will deploy and react to.

Haseeb Qureshi, Conister Bank

A low-code approach

The market has already grasped the opportunity of low code development. Almost two thirds of firm report their use of low-code software is increasing,⁵ while low-code application development is predicted to grow to a \$27.2 billion market by the end of 2022 and grow at a rate of 45% annually thereafter.⁶

Low code development platforms use visual interfaces with simple logic and modular configurations. It’s a drag-and-drop approach to systems implementation. A user can leverage flexible and reusable templates to decrease time-to-market and increase return-on-investment.



The skill set required to utilise low-code systems is lowered, enabling a wider range of people to configure and implement the system. It turbo-charges experienced developers by making them much more productive.

A well-designed low-code platform allows for customisation on top of the platform and not in conflict with it. With this in place, the moving of older applications – process management, capture capabilities, document processing – can be expedited.

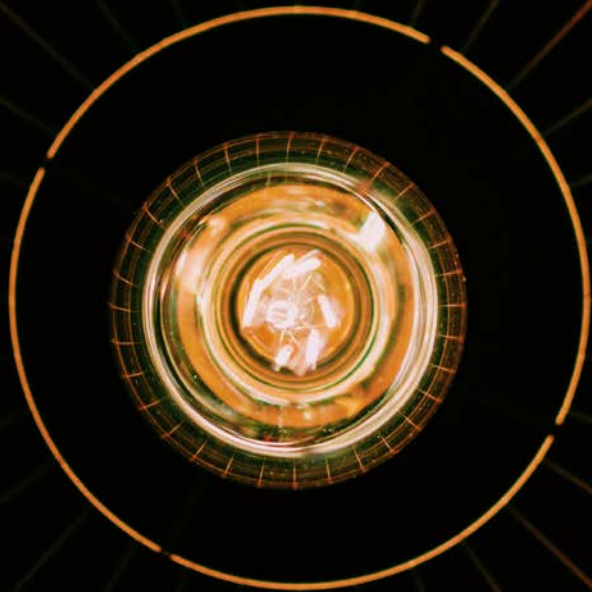
The quick adoption of low code AI can allow creative, mission-driven employees to innovate. Data scientists can take pre-built models, remove aspects they no longer need, and retrain the remainder to do what’s required.

⁵ https://www.nuxeo.com/resources/low-code-research/Nutm_source=fintechfutures&utm_medium=paper

⁶ <https://www.researchandmarkets.com/reports/5120226/low-code-development-platform-market-growth>

Custom learning models are key to AI success in financial services

By Sean Baird, director of product marketing, Nuxeo



The use of AI in financial services has become much more commonplace over the past few years. Recent Nuxeo research revealed that more than two-thirds of UK FS workers believe that AI can transform many FS practices,⁷ and FS firms are using AI in various ways.

One of those ways is using personalised AI to unlock the content that FS firms hold. Content is an integral element of modern business strategy, essential for driving compelling customer experiences (call centre operations, customer self-service, etc.) as well as in numerous back-office processes, such as claims processing or underwriting.

FS firms generate and manage more content than ever, and this content is crucial for gaining competitive advantage. How can organisations use AI to get more value from their content?

Generic models and custom learning

Many technology firms offer commodity AI services that can be leveraged for working with content. These are generic models that are low-cost and quick to implement, and they provide more common insight that isn't focused on a particular industry. These AI services are provided by cloud-infrastructure vendors and users can benefit from insights taken from thousands of customer examples.

A complementary way of using AI can be found in custom modelling. This business-specific approach requires more setup through training but delivers more specific information that drives even more value to the organisation.

⁷ https://www.nuxeo.com/resources/finserv-future/?utm_source=fintechfutures&utm_medium=report

“The more content generated in FS, the more that AI is required to unlock the value within it. While generic models offer some value, using custom models is the most effective way to maximise FS content.



Sean Baird, director of product marketing, Nuxeo

A custom model is one that has been trained with an organisation’s own data sets and can produce much more accurate and contextual data about content, which is more valuable to the business.

Three of the primary ways in which FS firms can use custom models are as follows:

Automation – Personalised AI helps firms better automate their critical business functions and processes. Paper forms are a good example. Many enterprises still process millions of paper forms every year. Checks must be made to see if each form has been completed correctly before it is processed, a manual, highly labour-intensive and costly exercise.

Machine learning models can do all this. Organisations can capture forms from a variety of sources and convert them into digital images/ documents. Machine learning is then used to correctly identify the different forms and perform the necessary validation on the provided information. For an FS firm still processing volumes of paper forms manually, this could save millions annually.

Data Enrichment – This is all about extracting data from content and using that data to make that content more accessible, contextual, and valuable, such as converting images into PDFs so they can be indexed more easily. Within a content services platform (CSP), custom machine learning models extract specific insights from the object (document, image, video or other) and save the learnings as metadata that can be used to find and retrieve the document or enable automated decision-making based on these insights.

Commodity AI can extract data from documents, to help search for them, organise and manage them, or to trigger business processes based on this data. Custom learning models take this further by inferring additional insights from more complex document types, such as photos and videos.

Business-specific AI can extract more specific data from these documents. In insurance this could include the make or model of a car, or the amount of damage caused in a traffic incident for example.

Insight – For many FS firms, the insight contained within their content is vastly under-utilised. AI can help extract insights and intelligence from existing business content and deliver that insight back to users to make more informed decisions. This is inherently more valuable when approached using a custom model.

A good example of this can be found again in insurance. Insurers can use machine-learning models to identify claims with similar accident damage in vehicles that are of the identical make, model, and year.

By then cross-referencing actual repair costs to come up with a real-time estimate for the damage depicted in the photograph, this information could be immediately shared with the customer and also used to validate estimates that were subsequently submitted by the insurer's repair network.

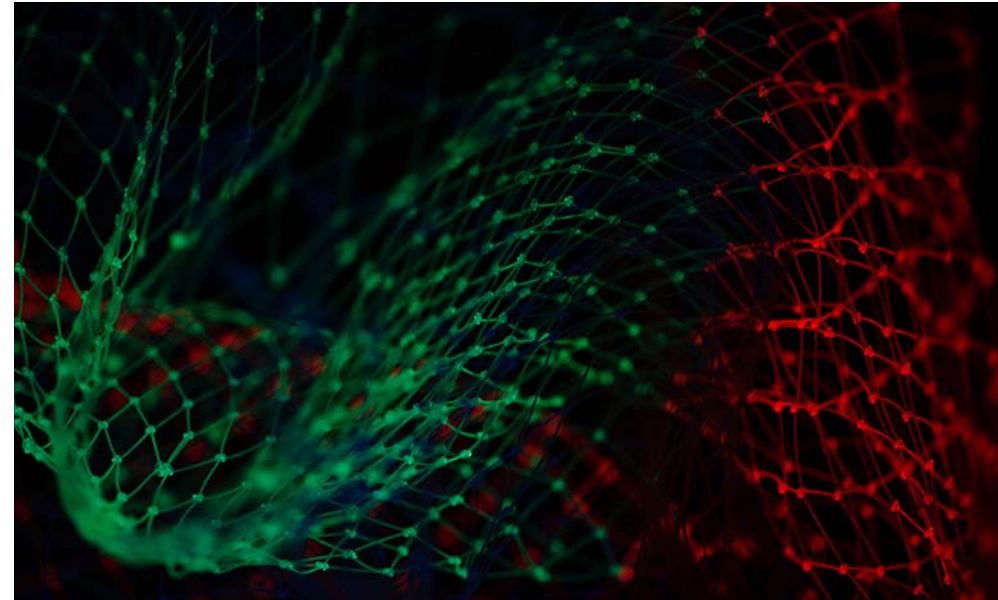
The more content generated in FS, the more that AI is required to unlock the value within it. While generic models offer some value, using custom models is the most effective way to maximise FS content. It's important to note too, that this approach is not reliant on data scientists. Using automated training and low-code development tools makes custom AI much more accessible to the business users who actually require and work with content and insight.

Final thoughts

The revolution of AI is only just beginning, and it will be a long time before we come close to its conclusion. Getting in on the ground floor is always smart business, but firms first do so by adopting the right approach and ensuring the right preparations are made.

Organisations can establish a foundation for ongoing modernisation through the application and AI and machine learning. There is no better place to start than with content, a traditional backbone of the financial services sector and an ever-present in the day-to-day operations of all banks.

Firms should take a rational approach to innovation, and lay the groundwork through the connection of existing data and content sources, the integration of multiple repositories of data, and the extension in value of existing systems. These steps can ultimately lead to the establishment of single, future-proof platform viable for integration on-premises, on the cloud, or anywhere in between.



About Nuxeo

Nuxeo, developer of the leading Content Services Platform, is reinventing enterprise content management (ECM) and digital asset management (DAM).

Nuxeo makes it easy to build smart content applications that enhance customer experiences, improve decision making, and accelerate products to market. Its cloud-native, low-code platform has been deployed by large enterprises worldwide.

Customers like Electronic Arts, TBWA, ABN AMRO, and CVS have used Nuxeo's technology to transform the way they do business. Founded in 2000, the company is based in New York with offices across the United States, Europe, and Asia.

Learn more at www.nuxeo.com

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FinTech Futures is a digital publishing platform for the worldwide fintech community – from the industry veterans to those just entering the space, and everyone in-between!

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Our broad readership and solid reputation, combined with in-depth coverage across fintech on a worldwide scale, makes us the leading resource for technology buyers, sellers, developers, integrators and other specialists across the sector.

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