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Using unstructured data analytics for competitive advantage

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Summary

Introduction

Data analytics is an extensive technology that can be applied to many scenarios and use cases, providing capabilities to many areas of an organization. Infused with artificial intelligence (AI) and machine learning (ML) capabilities, it is embedded throughout content management solutions including content services platforms, web content management (WCM) or digital experience management (DXM) platforms, digital asset management (DAM) solutions, and eDiscovery systems. Although it can be used to analyze structured data, it is applied mainly to unstructured content, which comprises approximately 80% of the data within enterprises, including documents, email, images, video, and audio.

The COVID-19 pandemic has resulted in data analytics taking on a new importance, in supporting employees forced to work from home, but also in helping enterprises to adapt their business models to supporting digital marketing and sales models, in many cases replacing bricks-and-mortar engagements. However, the impact of the pandemic on profits has resulted in many organizations having reduced budgets for any major IT projects, which means doing more with less. This means that every proposed implementation has to be justified and must show that it can achieve a rapid return on investment (ROI) and result in efficiencies. Data analytics is a technology that, if implemented optimally, either as a standalone product or embedded within another application, can result in cost savings due to an increase in employee productivity through automation and improved work practices.

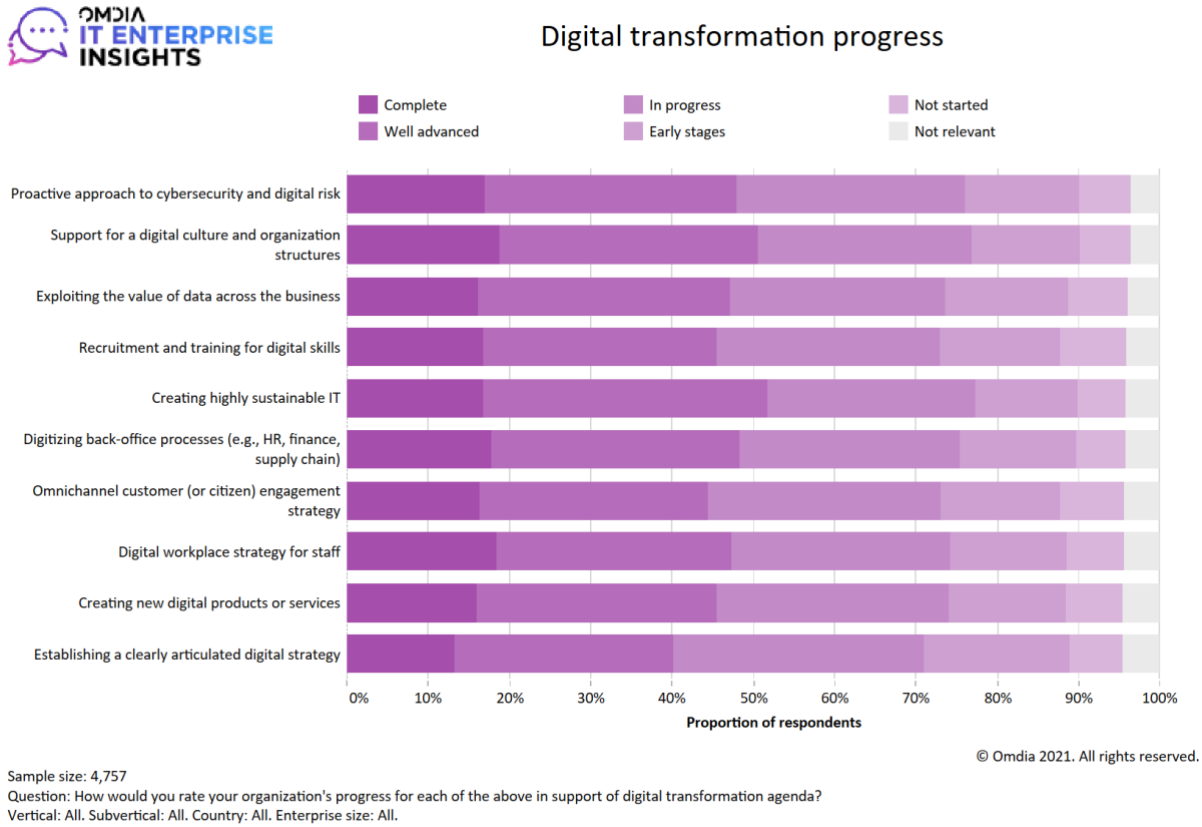
The evolving market landscape means enterprises need to do more with less

Many organizations have failed during the COVID-19 pandemic, with the Federal Reserve in the US estimating that approximately 200,000 extra companies went out of business over what would normally have been expected during the first year of the pandemic. According to Sky News, using data from the Local Data Company, there was a net reduction of 5,251 outlets across high streets, retail parks, and shopping centers in the UK between January and June 2021, following a decrease of 6,001 outlets in the first half of 2020, suggesting that many businesses collapsed during the first lockdown in the UK. A major factor in the high number of failures is the businesses' inability to adapt from the bricks-and-mortar model to online digital models. Unfortunately, closures are continuing into 2022 as more consumers embrace online sales. Businesses need to be agile to evolve business models and adapt to changing circumstances. McKinsey data shows that 20–30% of business moved online during the peak of the pandemic.

Data from Omdia's IT Enterprise Insights, which is an annual survey of more than 6,200 IT decision makers from 56 countries in 15 major industries, shows that a significant number of companies

reduced their budgets as a result of the pandemic, and enterprises are also accelerating digital transformation initiatives. **Figure 1** shows enterprises' digital transformation progress across a number of technology areas.

Figure 1: Digital transformation initiative progress



Sample size: 4,757
Question: How would you rate your organization's progress for each of the above in support of digital transformation agenda?
Vertical: All. Subvertical: All. Country: All. Enterprise size: All.

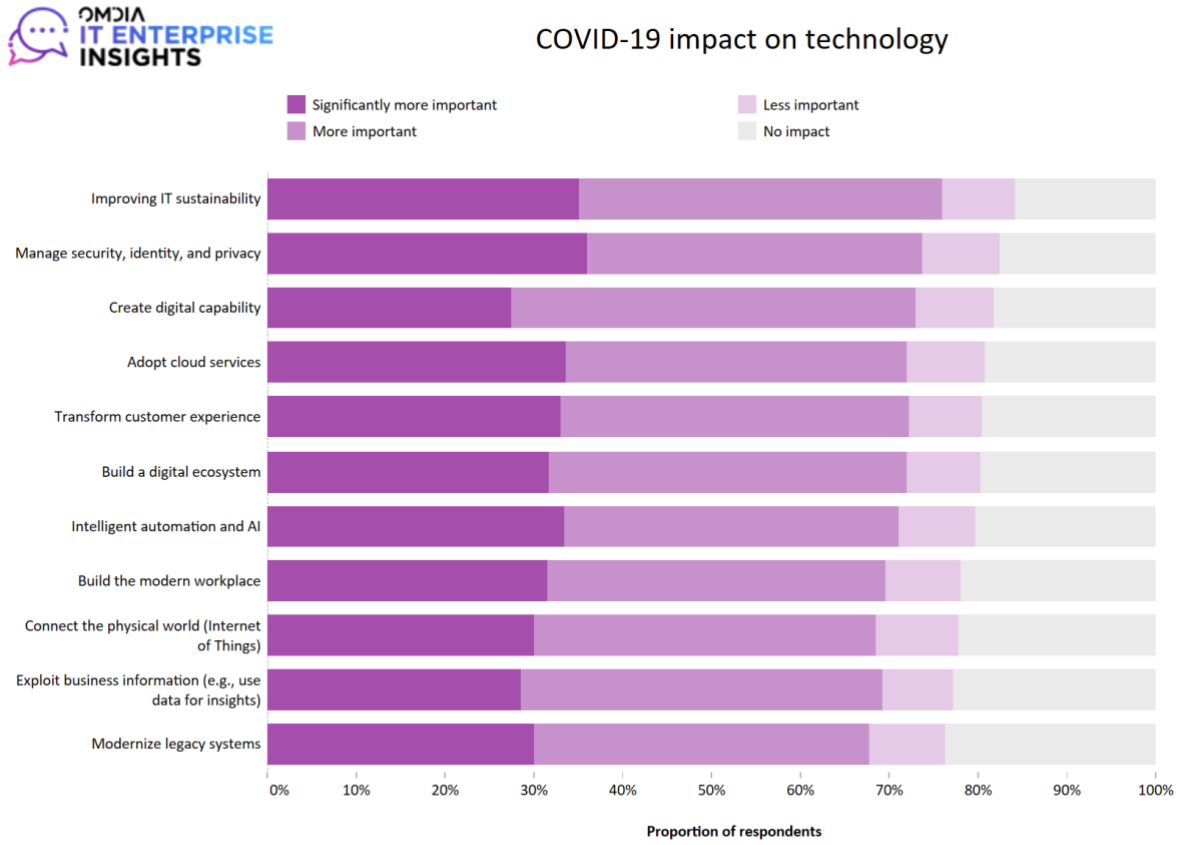
Source: Omdia

Two technology areas in **Figure 1** in which data analytics feature heavily are: exploiting the value of data across the business, which is concerned with extracting insights from content; and omnichannel customer (or citizen) engagement strategy, which involves using analytics to develop customer engagements for competitive advantage. The data shows that few enterprises have completed their digital transformation initiatives in either of these areas, but many are well advanced, with a large number either in the early stages of digital transformation or in progress. However, due to the pandemic and the impact of reduced budgets, enterprises are now having to do more with less, which means achieving maximum benefit from any new systems, including creating more efficient processes, adding automation, and increasing employee productivity.

This is borne out by the Omdia ICT Enterprise Insights data that shows that many technology areas have become significantly more important during the pandemic, including transforming customer

experience, intelligent automation and AI, and exploiting business information, including using data for insights. **Figure 2** shows that approximately 70% of respondents believe that these technology areas have become more important as a result of the pandemic.

Figure 2: Impact on technology of COVID-19 pandemic



Source: Omdia

Changing business practices are helping to drive the need for data analytics

Volumes of content within organizations continue to grow exponentially, but the format of the content is changing as digital assets such as images, video, and audio take on a much more important role in organizations having to move a much higher proportion of their sales online due to the COVID-19 pandemic. At the same time, volumes of documents and emails continue to grow.

There are two significant issues for organizations resulting from the growth of content: the first is an ability to efficiently manage and be aware of the existence of all items of content so they can be used; the second is being unable to derive valuable insights from the content.

The value of and risk posed by content is often not appreciated by organizations

An organization's ability to manage content can often take on the appearance of a disorganized office, as depicted in **Figure 3**, but paper documents are not the only content that workers have difficulty finding. Users can spend many hours searching for the electronic documents they need to work with, which can amount to days or even weeks of lost productivity over the course of a year. Although the organization will probably have an enterprise search capability, there may be multiple versions of the document, or the user may not be aware that the document exists and will therefore recreate it. This issue has become more critical due to the pandemic, as employees working from home no longer have the support of colleagues who may know where a document is located.

Figure 3: The disorganized office

Source: freepik.com

With rapidly growing volumes of content, organizations typically have no idea of the nature of much of the content they have, and therefore whether it has value to the organization, or whether it can safely be deleted. This is an important issue because the longer content is retained, the higher the risk that it could be used in litigation against the organization. Deleting unrequired content that has no value has two benefits: firstly, it eliminates the risk of it being discovered and used in litigation; and secondly it reduces the amount of content that needs to be managed. Another risk is the existence of contentious or damaging content that could be used in litigation if it were to be discovered. Ignorance of the existence of such content is no defense and can result in costly and damaging litigation.

One of the early stages of litigation is often a request to determine the extent and cost of the discovery exercise, requiring an assessment to be made as to whether it is worth perusing the action or whether a settlement should be sought. However, the cost of such an exercise and the timeframe

within which it should be completed makes this difficult to achieve if the organization does not already have the tools to help with the process.

Digital assets have become much more important as a marketing tool

As a result of the COVID-19 pandemic, digital assets have become much more important to marketers, as many organizations, particularly in retail, have been forced to move from bricks-and-mortar premises to 100% digital sales during lockdowns. This has given rise to a rapid growth of digital assets, as well as changes to the way in which organizations use these assets to showcase products when face-to face interactions are not possible. As a result, there has been much larger dependence on video and audio as a replacement to the shop assistant. Therefore, the need for a prospective customer to be able to locate a specific point in a video or an audio recording to view or listen to a particular attribute of a product has become vitally important. However, without the right technology in place to support this, searching video or audio for a single frame or word is very time consuming.

Moving sales online has also put increased pressure on marketers and creative teams that can spend a lot of time looking for relevant images or videos for marketing campaigns at a time when they are relying more heavily on digital channels to market their products. When also having to take into account specific requirements such as branding guidelines, requiring specific colors or images to be used, it can be time consuming to find the appropriate content.

Marketers also need a complete 360-degree view of customers, which includes being able to track them through all interaction points across all channels to create an integrated and holistic customer journey. This can be difficult if a customer interacts via a call center. All too often this type of interaction is not included as part of the customer journey because, without the agent taking copious notes, or filling out a standard form, it can be difficult to understand the nature of the call and how it fits into the overall customer experience. In addition, many callers have relatively simple queries that could be handled via self-service if an organization has the relevant systems in place to support this.

Manual processes involving content are an important area where digital transformation initiatives can help through the acquisition of technology that supports automation. For example, employees can spend a lot of time processing forms, with the need to manually enter information into backend systems and move forms around the office as employees work on different parts of a process, which means that processes can take days or even weeks to complete. In addition, with more employees working remotely, it is nigh on impossible to physically move pieces of paper between people.

Another issue faced by organizations is not knowing what customers are writing about the company and brand, which can be very damaging and poses a huge risk if negative content is being produced and not addressed. In extreme cases this can put a company out of business. However, knowing that people think highly of a product can provide a marketing opportunity.

Data analytics can be used to provide competitive advantage

Content analytics can be applied to different areas of the business

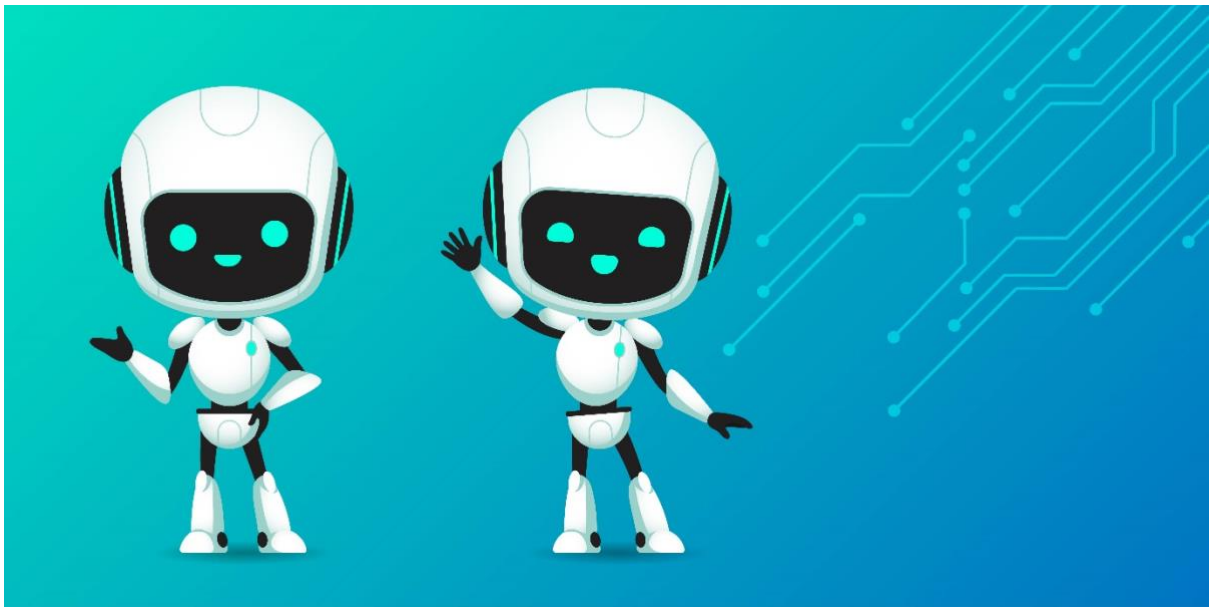
Data analytics is embedded in content analytics solutions, and has a number of use cases across the enterprise. One area it is being applied is in content services platforms, using intelligence to recommend content to users based on the last document they worked on, the user's work practices, or the type of content they access. It can be deployed to ensure the latest version of a document is always offered.

Using the AI capabilities within data analytics, the technology can be used to derive valuable insights from content, which can be applied in a number of different areas, including as a repository for sharing the knowledge and expertise of employees. It can also help organizations to understand the nature of all of the content they have by providing visibility, allowing them to identify and remove contentious content that can safely be deleted. It also provides the ability to assess what content has value to the organization and should therefore be retained, and which content can be deleted. By analyzing who accesses an item of content, the frequency of the access, and how it is used, managers can assess whether the risk of keeping the content outweighs its value to the company.

Content analytics can also be embedded in eDiscovery solutions, where it can be used to assess the risk posed by content should litigation be instigated against the organization. It can also determine whether it needs to be protected by limiting who is able to access it. Using the search capabilities, it can help in the initial searches when a discovery request has been received, identifying information that may be relevant to the case.

One of the impacts of COVID-19 has been the increase in self-service, for both employees and consumers. In the case of consumers, the use of chatbots is growing (see **Figure 4**), which are used to answer common questions. There is often a database of standard answers available and the chatbot will select the most appropriate answer when asked a question. More advanced systems may also allow a number of databases and documents to be searched for answers. Although chatbots are typically used on websites, virtual assistants that deploy similar technology are generally based on speech.

Figure 4: Examples of chatbots



Source: freepik.com

The ability to extract sentiment from text is an important capability in a number of different areas, including content analytics, eDiscovery, and DXM systems. However, it is not included in all relevant products. Sentiment analysis can be used internally to gauge the sentiment in documents or emails received or sent. This can be extended to eDiscovery, where sentiment may be relevant to a matter. It allows organizations to find out what customers feel about their products and services, allowing them to detect complaints or negative comments, which must be responded to speedily before brand damage can occur. On the upside, it can also detect positive comments or feedback, which can be used in marketing if the appropriate permissions are received. Sentiment analysis software should be able to reach out and monitor mentions across the internet including on websites, blogs, and social media sites. Marketers can use positive comments to their advantage by incorporating them into advertising (with the permission of the author).

Automation is synonymous with AI, and data analytics has helped to enable automation in many technology areas, including the ability to capture data using optical character recognition (OCR). OCR is already widely deployed in capture solutions to capture data from forms. This means the system needs to be able to identify specific types of information such as a date of birth, first and last names, and credit card numbers. This allows information to be identified and extracted from forms, which is then automatically entered into backend systems.

Many organizations store an electronic image of captured forms. These forms often contain sensitive information, and the ability to automatically find this information using data analytics and then automatically redact it protects the data. It also allows people who are not authorized to view all of the content to see an image of the form, and is useful for forms that have been found as part of an eDiscovery process, to prevent unauthorized persons from viewing sensitive information or information not relevant to the matter.

Data analytics is embedded throughout DAM products to help marketers and creative teams work with digital assets

Data analytics capabilities have been embedded into DAM systems to add automation to mundane tasks such as auto tagging content, which is an important feature as the software can recognize attributes in images and video and can add tags based on the subject of the images or video. Video can often be tagged at the individual frame level, and each image can have multiple tags. This provides a quick and easy way for creative teams or marketers to locate suitable images to use in advertising or marketing.

Color analysis is a relatively new feature in DAM systems, and it allows particular shades of color to be identified using AI within data analytics, which can be used to ensure that brand guidelines are adhered to. It can also be used to identify infringements of copyrighted material by third parties, which is an area that is becoming more important in identifying fake products.

Facial recognition deploying AI is a hugely important area, which has been deployed by police forces, but it is also important in marketing. It is present in some DAM systems, where it is often used as a means to identify talent such as models for marketing campaigns, or to check whether a particular image of a model is properly licensed for its use. Face demographics allow gender, ethnicity, and age to be identified, which could be valuable to marketers when developing marketing or advertising campaigns to target specific audiences or events.

Another important area in data analytics is speech-to-text conversion, allowing whole videos or audio recordings to be transcribed, with the text being indexable and searchable. This allows users to search for individual frames based on what is being said, which is useful in identifying a section of video, or an individual frame to use in the film industry or for a marketing campaign; for example, it can be used to create subtitles or translate the text. In the case of audio, it can be used to transcribe telephone calls in call centers, which is invaluable for marketers, as a transcription of a call can be stored as part of the customer journey, and can be used to determine what the next step of the customer experience should be.

Conclusions and recommendations

The COVID-19 pandemic has accelerated digital transformation initiatives, and has increased the importance of data analytics, as organizations have needed to adapt to supporting more home working, and provide tools to improve productivity, introduce more automation, and make it easier for employees to work. At the same time, enterprises have a much heavier reliance on digital channels, which has required adapting to new sales models and innovative ways of showcasing products, with images, video, and audio becoming much more important. Many of the features of data analytics help to improve work practices, increase productivity, and help marketers to increase online sales. Therefore, any organization that has not already, should consider updating areas of the business where data analytics can play a big role in helping to automate mundane tasks including the capture and processing of content forms, or managing digital assets to enhance customer experiences and achieve competitive advantage.

There are a large and growing number of applications for data analytics, which are embedded throughout content management applications, be it content services platforms for content analytics, WCM or DXM for features to provide targeted content to enhance customer journeys, or DAM to

manage digital assets. Ensuring that any implementations of these platforms or applications include data analytics with embedded AI and ML capabilities is crucial, as is making the data analytics features one of the criteria on which vendor products are assessed during the procurement process.

As AI capabilities continue to improve, the applications for data analytics will increase. Some vendors are more innovative and creative when devising applications, particularly as automation is becoming increasingly important in data analytics solutions. When selecting a solution or a product that has data analytics embedded in it, enterprises need to ensure the vendor has a strong roadmap that includes innovative features that will add new use cases for AI-infused data analytics.

Appendix

Methodology

This report was prepared using information gathered from vendor events and analyst briefings, vendor meetings and technology assessments, interviews with end users, end-user surveys, and Omdia datasets.

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