ARTIFICIAL INTELLIGENCE IN CONTENT SERVICES
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CONTENT IS KING

Content is now a central thread running through the world’s largest companies. The content volume being created every day is staggering: 1.9 billion pieces of content shared on Facebook; 14 million images on Pinterest; and 500 million tweets on Twitter. In 2016, YouTube users uploaded 500 hours of video per minute.

Platform companies are under great pressure to process this mounting load of content safely and efficiently. Many have realized that simply scaling their content operations with ever more human agents is insufficient; they are already turning to artificial intelligence (AI) as a potential solution. Twitter, for example, is in the process of using AI on every one of the 456,000 tweets users send each minute of the day.¹ There is a growing realization that real advantage will accrue to those who invest early in AI, learn fast and move forward.

In today’s hypercompetitive environment, the real question is not whether you should choose to introduce AI but whether you can afford not to.
THE ROLE OF TASK AUTOMATION

Automation can play an important role in helping platform companies scale their content operations by expediting or eliminating time-consuming manual tasks. The future is not necessarily black and white though. We believe that an optimal path exists where the future is “bionic”: with lower level tasks being automated away rapidly, while humans stay in the mix to work on the higher value-added (and more nuanced) activities.

There are various forms of automation from robotic process automation (RPA), which automates repetitive manual process steps, to AI-assisted decision support, all the way through to full AI-enabled task automation of review steps that were previously conducted by humans.

While RPA is fairly well known, many companies are unfamiliar with the potential to fully automate content review decisions. Indeed, it’s challenging to keep up as automation capabilities and vendors quickly evolve. Rapidly advancing algorithmic capabilities are enabling many tasks to be automated that were once thought to be too complex for machine learning applications. For example, the tagging of discreet entities in images, including animals, vehicles, and friends, is now provided as a routine service by the likes of Google Photos and Microsoft OneDrive. Choices in automation vendors are also expanding as well-known brands such as Google, Microsoft, IBM and fast-growing startups with niche automation capabilities are competing in an increasingly crowded industry.
THE ROADMAP AHEAD

Many companies are uncertain about how to proceed in this quickly evolving space. Knowing the available technology, understanding which capabilities are appropriate, and choosing a vendor can be challenging. By following a logical three step approach (Figure 1), companies can build an automation roadmap that helps them run efficient content operations and meet increasing customer demands.

**FIGURE 1: A three step approach to efficient content operations**

<table>
<thead>
<tr>
<th>Overview</th>
<th>Step 1: WHY?</th>
<th>Step 2: WHERE?</th>
<th>Step 3: HOW?</th>
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<tr>
<td>Understanding the context for wanting to invest.</td>
<td>Identifying the best place(s) to deploy automation within current operations.</td>
<td>Choosing the best method of deployment.</td>
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<table>
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<tr>
<th>Key Questions to Address</th>
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<tbody>
<tr>
<td>What’s really driving our need to automate? Have we built a sufficient business case for the investment?</td>
<td>Have we prepared an operational scorecard on our current operations? Do we know how this assessment may shift in the near term? Have we identified and agreed near-term task priorities for automation?</td>
<td>Have we considered all of the viable paths forward in deploying a solution? Have we conducted a clear assessment of choices, and arrived at an agreed path forward?</td>
</tr>
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</table>
Step 1: WHY
Understanding the need

Understanding context is the critical first step; without it companies risk investing on a whim rather than for a sound business reason. Specifically, a company should identify (and weight) the drivers that might be leading it to introduce automation, as well as the constraints that might be holding it back.

There are several possible drivers to evaluate, including:

- **COSTS**
  Is the company hoping to reduce costs through automation?

- **INTELLECTUAL PROPERTY**
  Is the company wanting to develop automation capabilities as part of its innovation imperative?

- **PROJECTED GROWTH**
  Does the company have growth targets that current content operations will not be able to support?

- **REGULATORY / GOVERNMENTAL PRESSURES**
  Is the company facing actual or potential requirements to step-up its content moderation game?

- **COMPETITIVE PRESSURES**
  Are key competitors driving up consumer expectations around content tagging and curation beyond what the company can deliver?
Different companies may value these drivers differently. For instance, the European Commission pressure to “auto-flag” illegal content in European markets is placing immediate and significant pressures on some companies to find a scalable, automated solution to the problem of hate speech and other illegal content before they face tighter regulations and potential penalties. Twitter recently announced that 95 percent of the nearly 300,000 terrorism-related accounts it took down in a six-month period were flagged for review by algorithms rather than humans. Because its AI is continuously becoming faster and smarter in identifying these accounts, 75 percent of the suspicious accounts were removed before their first content posting.\(^4\) Competitive pressures could also be a driver for automation. Companies engrossed in a competitive battle to up their game in providing filters that drive engagement and revenue could be most interested in AI that raises the sophistication of their context identification and content tagging. This is why knowing the relative value of the business drivers behind automation is crucial context for prioritizing where automation should be deployed.

It’s also important to understand any constraints that may limit the path forward or influence the speed or level at which investments can be made. Potential elements here can include:

- **PRIOR INVESTMENTS IN AUTOMATION**
  Has the company made earlier investments into automation?
  How successful were they?

- **RELATIVE MATURITY / STABILITY OF CURRENT OPERATIONS**
  Are the current operations well codified? Are workflows fully optimized?
  Is there a risk of throwing automation against bad process?

- **PERCEPTIONS / PRECONCEPTIONS OF C-SUITE MEMBERS**
  What are the relative positions of other C-suite members?

- **BUSINESS CASE REQUIREMENTS**
  What benchmarks will any investment need to meet?
  Is there agreement on how success will be measured?

Once a company has a clear perspective on the context for automation, including a weighted assessment of drivers and constraints, it can then proceed to determining where to focus its attention first.
Step 2: WHERE
Identifying the best place to start

With the ‘why’ as a guiding light, this step involves reviewing the specific tasks within the current operation, and producing an operational scorecard against them. The scorecard should consider several criteria, broadly bucketed into three areas: capacity and volume, difficulty of implementation and likely importance or impact. The relative weighting of these criteria can vary between companies, and, of course, should be reviewed and agreed upon before assigning a final, weighted score. Once done though, the scorecard provides an objective, quantified toolkit with which to assign a ranking and order for automation.

Capacity and anticipation of future demand. Assessing current queue capacity and performance can provide an indication as to where task automation could provide an immediate benefit. For example, queues that are struggling to meet current average handling time targets or quality thresholds may benefit from task automation to offload some of the current demands on agents. However, it is important to also consider the anticipated future volume of each queue as operations scale. If operations are unable to meet the predicted demand, automation may be a solution.

Continuum of difficulty. Not all tasks are created equal. Understanding task difficulty, as well as automation difficulty, will help narrow down potential candidates. Ambiguity can be one indicator of difficulty (e.g. implementation of policy demands that are ill-defined), but there are others. Computer vision tasks that seem trivial to humans, such as identifying groups of objects or objects that are partially obscured behind other elements in a scene, can prove notoriously difficult for current automated classifiers. Ideal tasks to automate are ones that are difficult or time consuming for humans to perform, but relatively easy for off-the-shelf classifiers.

Importance and impact. Just as tasks vary in difficulty, they also vary in relative importance and impact. For example, a failure in a policy review queue that allows hate speech onto a platform will likely have a much greater negative impact than a failure to correctly tag a product image. It is therefore important to understand how critical each task is and the associated impact if the task isn’t completed, or is completed incorrectly.
Only when the scorecard is agreed, with the resulting set of high priority candidate tasks for automation, should the company turn to considering how best to deploy an automation solution.

**Step 3: HOW**

Choosing the best method

The final step in putting together a roadmap for AI focuses on determining how best to deploy the required solution. Choices made in the first two steps will certainly influence this decision. For example, prior unsuccessful investments around automation may guide a company toward a lower risk (“safe vendor”) path forward. Also, particular types of specialist tasks (such as computer vision labeling of street-level images) may point toward certain vendors with strong capabilities in this area.

In general, companies should evaluate deployment choices by considering several important criteria:

- **BUY VS. BUILD**
  Is the company committed to building its own solution (and owning the resulting IP), or is it willing to buy a vendor solution?

- **CUSTOM VS. OFF-THE-SHELF**
  Are the priority tasks identified in Step 2 general enough to allow an off-the-shelf solution (e.g. object classifiers for shoes or shirts), or will they require some level of customization, or even de-novo development (e.g. classifying shoes for men vs. shoes for women)?

- **PILOT VS. SCALED DEPLOYMENT**
  Does the company want to start small, with a pilot or do they need to hit scale rapidly?

- **HUMAN REPLACEMENT OR HUMAN-IN-THE LOOP**
  Will human agents remain in the loop, in a fail-safe or limited QA role, or will they be removed entirely?
For companies preferring to buy a solution, choosing the right vendor can be quite challenging. Figure 2 provides an overview of the major industry participants that have developed flexible and responsive embedded AI content services that deliver faster business value. These include established Tech Giants, as well as fast-growing startups. The large players, such as Microsoft and Google, have very broad capabilities and toolkits, whereas the smaller startups offer more limited and targeted solutions on certain aspects of AI. Clarifai, one of the leading AI startups, has been gaining momentum among several businesses interested in implementing AI technologies, as it is recognized for its world-class visual recognition API. At the same time, the most comprehensive AI solutions are those offered by the Tech Giants, which provide more capabilities and functionalities, from training models to detect harmful images and videos, to tagging and classifying content for moderation, and much more.

**FIGURE 2: AI vendors landscape**

<table>
<thead>
<tr>
<th>TECH GIANTS</th>
<th>STARTUPS</th>
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<td>Microsoft</td>
<td>Besedo</td>
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<td>AWS</td>
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<tr>
<td>IBM</td>
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<td>GCP</td>
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<td>Metadata</td>
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<td>INGEST</td>
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<td>Image</td>
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<td>Video</td>
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<td>MODERATION</td>
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<td>Image</td>
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<td>Video</td>
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<td>TAGGING</td>
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<td>Image</td>
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<tr>
<td>Video</td>
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<tr>
<td>CUSTOM TRAINING</td>
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<tr>
<td>Text</td>
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<tr>
<td>Image</td>
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</tbody>
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Source: Crunchbase, Gartner, Company Websites, Accenture Analysis
Working through the why, what and how framework to create a clear automation roadmap will help to ensure the automation journey is aligned to business priorities. But, deployment takes long term commitment. A clear roadmap should indicate a relative phasing of priorities, but also build in flexibility for the inevitable shifts in timelines.

**During the journey, circumstances—such as customers, regulators, and competitive dynamics—can radically shift and a frequent reassessment of priorities and refresh of the roadmap will be needed to make sure priorities stay aligned.**

**WHAT’S NEXT**

Managing billions of pieces of content in today’s world is exciting and challenging. AI is a critical tool that will enable companies to continue scaling at speed. Accenture’s deep technical and industry knowledge allows us to advise the world’s largest companies on the most effective ways to deploy AI and layer it into operations to scale with speed.

**If your company is struggling to meet the scale challenge, the time is right to develop a clear plan for AI.**
To learn more about how to best introduce AI into your content operations, contact:

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NOTES

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