Intelligent Automation in Life Sciences Commercial Operations: Enhancing the Customer Experience without Increasing Costs

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Introduction

As the key customers of life sciences companies, patients, providers and pharmacies are all demanding an enhanced customer experience and broader commercial services as the healthcare model continues to evolve. To be successful, life sciences companies must meet these high customer expectations while also maintaining tight cost control. Deploying intelligent automation (IA) within commercial operations can liberate funds to shape a better customer experience and bring treatments to market.

In previous publications, we've discussed IA's impact on the pharmaceutical supply chain, as well as the payor's revenue cycle management (RCM) process. Now, we'll look at how IA can bring practical solutions to commercial operations in the life sciences industry by increasing the return on invested capital (ROIC).

In the case of RCM, IA drives an increase in capital efficiency, but in the supply chain and commercial functions, IA aims to improve the operating margin. Supply chain operating margins are improved primarily by lowering the cost of goods sold (COGS). However, in the commercial space, these margins are improved through selling, general and administrative (SG&A) expenses. The SG&A of life sciences companies tends to be very high when compared to the cross-industry average of 15% to 25% of revenue,[1] with some of the highest, like biotechnology companies, sitting well above at ranges of 50% to 55% of revenue.[2]

Clearly, there is a significant opportunity to improve this ratio through the application of IA technology. To illustrate this, we will examine some of the use cases with the highest potential across three sub-areas of commercial operations: marketing, sales and service.

[1] https://investor.regeneron.com/news-releases/news-release-details/regeneron-reports-first-quarter-2019-financial-and-operating-0

[2] https://saibooks.com/sga-benchmarks/

# Marketing: Benefiting Beyond Decoupling Digital Asset Management

Over the last several years, the marketing functions within life sciences organizations have tried to reduce costs through decoupling the digital asset creation and management process. This has included leveraging expensive marketing agencies for creative and design only, while leveraging low-cost and even offshore resources for digital asset creation and management. In addition, content management solutions (CMS) and digital asset management (DAM) solutions have been embedded into systems to help automate and improve workflow.[3]

While both of these actions have lowered costs and increased throughput to a degree, IA can build on this foundation and propel marketing efficiency in DAM.
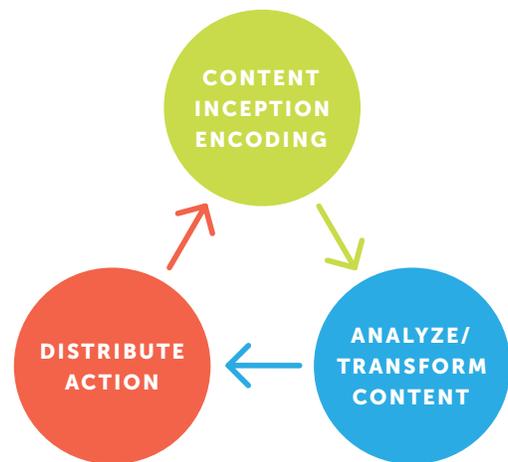
A NO-COST RESOURCE IS BETTER THAN A LOW-COST RESOURCE

Although some life sciences companies have moved to a model in which so-called 'low-cost resources' are used in the DAM process, the process itself can be condensed further through the deployment of a broad set of IA techniques, including encoding. But how?

CONTENT MANAGEMENT—NOW

ORGANIZATION

CLASSIFICATION

REMOVAL/ ARCHIVING

STORAGE

PUBLISHING

WORKFLOW

EDITING
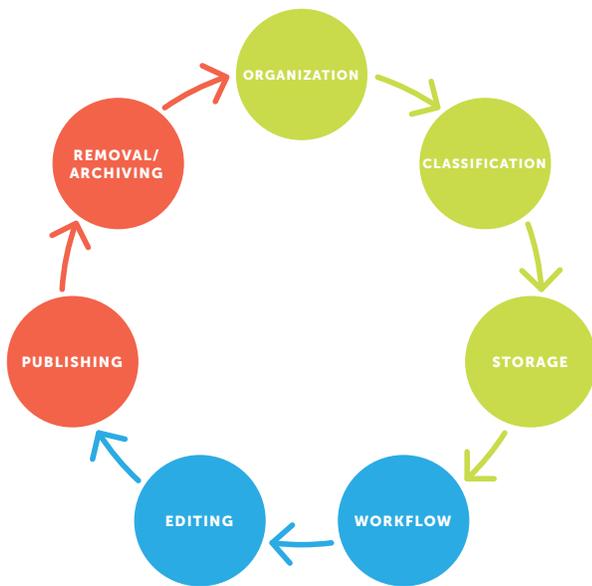
CONTENT MANAGEMENT—FUTURE

CONTENT INCEPTION ENCODING

ANALYZE/ TRANSFORM CONTENT

DISTRIBUTE ACTION

The figure on the left shows the as-is content management process for life sciences organizations. The figure on the right shows a simplified process enhanced by intelligent automation.

[3] http://www.pharmexec.com/life-sciences-organizations-overcome-today-s-biggest-content-management-challenges

Here's an example of how IA could make an impact. At the inception of digital asset development, an automated process is designed to monitor the creation of the material and its sub-components. The automation process generates the required metadata and other parameters, including storage location, based on defined taxonomy and business rules. All the gathered metadata and parameters are defined by a single unique code for each captured component, which encodes the material at the point of origination.

Once the digital asset is fully assembled, an identification key compiles the encoded material and its location. The encoded asset key is then used by an automated process to recreate other assets using the array of codes compiled from the component asset, providing the ability to edit the content automatically by swapping unique components and classifying, storing and approving the promotional material for publishing via the DAM solution.

In this case, information is stored in an ontology that can be used by conversational agents, like Alexa and Google Assistant, or chatbots, like Luis or Lex, for users to seamlessly interact and enhance the knowledge base—all of these capabilities are a part of the IA framework, in addition to robotic process automation (RPA).

Skeptical? Forrester predicts that by 2021, organizations will leverage over four million bots to eliminate data entry, collect data from disparate sources, and cross check and validate information.[4] These are the core activities associated with DAM and demonstrate that soon, the low-cost resource will become a no-cost resource.

Sales: Behind the Resource Allocation Veil

The question is simple: "How do we allocate our resources most effectively to reach our customers and optimize our return?" Interestingly, how life sciences companies answer that question is surprising.

A staggering number of companies still use vendors with black box solutions undergirded with data consultants to provide them an ill-understood and fragmented resource allocation plan. In fact, a study conducted by Boston Consulting Group found that no life sciences company was strongly satisfied with their resource allocation process. In fact, 55% were either 'partially' or 'strongly dissatisfied.'[5]

WHY DO WE NEED A PERSON BEHIND A CURTAIN?

In our experience, around 60% or more of the time associated with resource allocation involves collecting and harmonizing data. Even when there's a data warehouse, data lake or analytics environment, this statistic still roughly holds. This task often falls to a person – the person or, more appropriately, people— behind a curtain at a consulting firm responsible for resource tracking and allocation.[6]
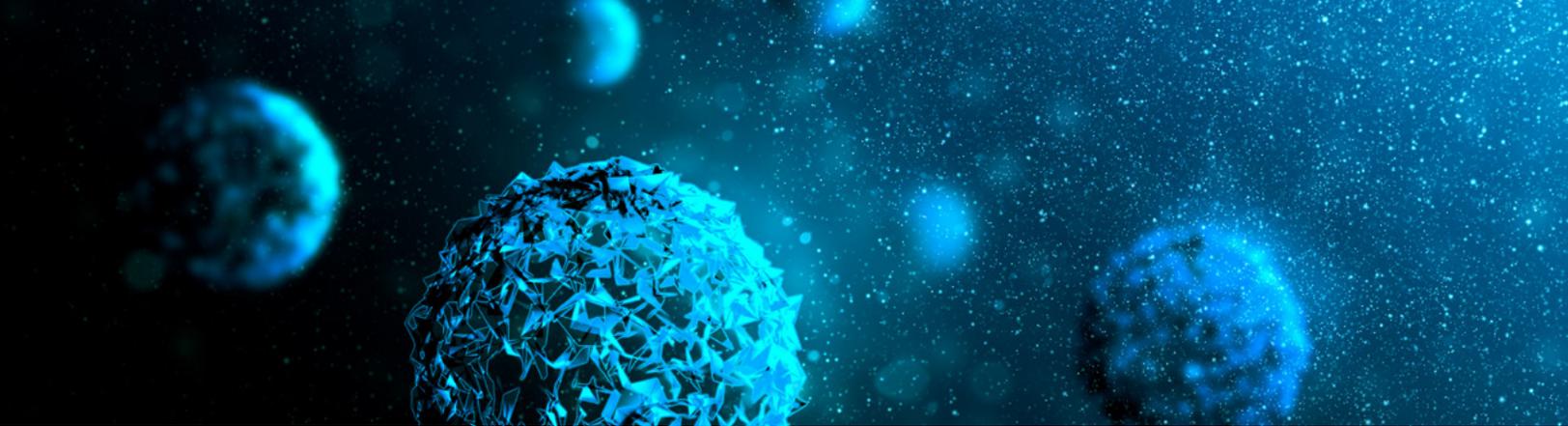
IA can play a key role in reducing or removing this need for human intervention in resource allocation. Highly flexible software bots can work in tandem across various data and business intelligence (BI) platforms, as well as disparate systems or flat files to collect relevant information in one place, which can then be used to provide insight to determine resource allocation decisions. It can also detect gaps between the different information sets, providing insight into the root cause of information deviation.

[4] https://www.forrester.com/report/The+RPA+Market+Will+Reach+29+Billion+By+2021/-/E-RES137229#

[5] https://www.bcg.com/en-us/publications/2014/biopharmaceuticals-marketing-sales-breaking-through-the-noise.asp

[6] https://www.tandfonline.com/doi/abs/10.1080/08853134.2000.10754234

WHY DO WE NEED A CURTAIN?

Once the data is collected, an extensive set of IA and BI tools can be leveraged to analyze the information. This could span from rule engines to unsupervised machine learning (ML) to complex neural networks to develop resource allocation recommendations. The BI can provide the logic for why predictive decisions make sense analytically and systematically, while the pattern-based ML predicts a better aligned futuristic view of what is coming based on historical information. Thus, the person and the curtain, along with the high vendor cost associated with resource allocation, can now be bypassed and potentially shifted to perform more high-value work.

Service: High Tide & Low Tide for Patient Services

With 85% of life sciences companies planning to raise their investment in patient services over the next 18 months, it's the high tide of patient services. These investments are being made with good reason, as nearly 60% of patients that are aware of the services available leverage them, and more than 75% say they value them. The challenge, however, is the low tide of awareness of these services from both patients (~19% awareness) and physicians (~40% awareness), which has led to an environment where the ROIC is extremely slow.[7]

In many ways, the issue of such low awareness of patient services stems from the healthcare industry service model. With fee for service being the primary driver of medical care, providers are constrained with the amount of time available to treat patient needs. The majority of providers do not have the additional resources or time to check patient formularies, keep up with the nuances in treatment regimens, screen for mental health and investigate patient services platforms in the short time frame allotted to them for medical care. Coupled with regulations imposed on pharmaceutical companies that demand strict adherence, it is no wonder why awareness of patient services programs remains low.

Furthermore, pharmaceutical companies have challenges standardizing the true ROIC. With revenue not being the principal component, business executives justify continued investment with value-add metrics. In our experience, metrics used to justify additional investment should include number of patients registered, number of pre-authorizations submitted/approved, and even social media posts commenting on the patient's adherence to treatment. IA does not magically solve these challenges, but it can free up resources for tackling them.

IA AS A PREREQUISITE TO PRE-TREATMENT

While it is true that companies must engage with patients in a more meaningful way across the care continuum from first awareness to treatment, 65% of patients feel that pre-treatment is the most frustrating aspect to care.[8] Patients want more help in this stage and deploying IA technologies has serious potential to improve patient satisfaction.

Using IA-driven capabilities, like conversational agents, chatbots and robotic process automation, combined with an ontology created specifically for healthcare, companies can develop care companion applications for mobile or desktop to identify and curate pre-treatment information along with patient services that best fit a patient's needs. These solutions can be deployed at a patient level or leveraged as a tool within the physician's office to enable greater awareness and utilization of services by both parties.

A NURSE FOR EVERY OCCASION

Another significant trend in patient services is investing in nursing staff at contact centers. While these representatives can prove very helpful for patients, it's an expensive proposition which has yet to yield significant returns in either improved patient experience or outcomes, largely since many questions do not require a nurse to answer them.

A balanced blend of interactions with nurses combined with chatbots and conversational agents backed by a knowledge base created by supervised ML from past evidence can offer an effective patient experience at a lower cost. Furthermore, understanding patterns of calls through supervised learning in ML will help all contact center representatives – both humans (nurses and traditional customer service representatives) and virtual bots – by predicting the likely reasons for the call. This will enable representatives to be ready to assist the caller more quickly, elevating the experience for patients.

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[8] https://www.accenture.com/us-en/patient-services-survey-pharma-2015

Conclusion

As evidenced by the use cases covered above, IA can be used as an enabler to transform the commercial organization in the following areas:

- **MARKETING:** Deploy IA to automate core activities associated with DAM to reduce the need for manual data entry and increase operation margins

- **SALES:** Remove the need for human intervention in resource allocation by deploying IA and BI tools backed by supervised ML

- **SERVICE:** Leverage IA-driven capabilities like conversational agents, chatbots and RPA to speed and enhance the patient experience

Leaders in the commercial space that neglect IA will do so at their own peril, placing themselves at a competitive disadvantage thereby missing a key opportunity to improve their return on invested capital.

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