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Preparing for the Automation and Cognitive Computing Journey

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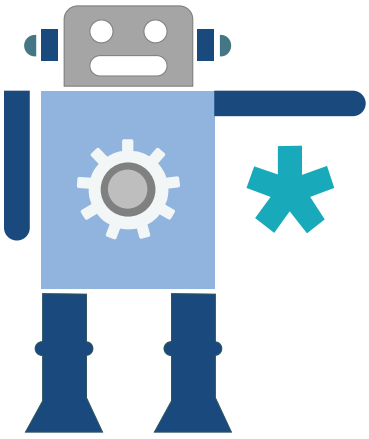
INTRODUCTION

From the beginning of civilization, humans have been dreaming of and designing automated devices and self-operating machines. In the 1920s, the word robot was first used to describe a fictional humanoid character, and the notion quickly caught the collective imagination as something that could free us from the kinds of work we consider drudgery. In some industries, robots have taken on repetitive or dangerous tasks humans prefer not to do or are unable to do because of the size, scope or location of the task. The Mars Rover, for example, can capture data in the extreme conditions of outer space that a human could not withstand.

Today, the use of computers to simulate the human thought process—the field now widely called cognitive computing—goes far beyond rote tasks to accomplish complex and learned operations. Cognitive computing systems help humans solve problems and make better decisions with the use of automation, statistical intelligence modelling, natural language processing and other sophisticated capabilities.

For the past few years, advances in automation and cognitive computing have been taking hold in the IT and business process services world, making certain repetitive, rules-based and mundane tasks faster and less labor-intensive, and are, therefore, changing the way some companies operate. Expectations for these solutions are high—and potential returns are great.



The term robot originated in the 1920s to signify a humanoid character that could do tasks considered to be drudgery; cognitive computing now goes far beyond rote tasks to very complex and learned operations.

But knowing when and how to implement automation and cognitive computing is a challenge for most enterprises. Different tasks and processes require different levels of complexity and industry-specific use cases require varying levels of control. Meanwhile, the technology is changing rapidly, and it's difficult to make certain an investment and the change associated with it will pay off. This white paper explores the archetypes of four different operating models enterprises are using in the market today and the design principles that play a part in achieving business objectives for automation and cognitive computing.

PREPARING FOR THE AUTOMATION AND COGNITIVE COMPUTING JOURNEY

DEFINITION OF TERMS

Though it's easy to get caught up in imagining the potential of automation and cognitive-computing solutions, their efficacy in the context of IT and business process services can be validated by just two simple proof points:

1. **Does the application of this technology achieve higher efficiency?**
   How much faster, cheaper and more consistently than humans do software bots complete repetitive tasks in a specific context?

2. **Do automation and cognitive computing deliver better solutions to complex problems?**
   How well can cognitive technologies solve or assist a human in solving higher-order problems that yield better results than currently possible using data and human judgement?

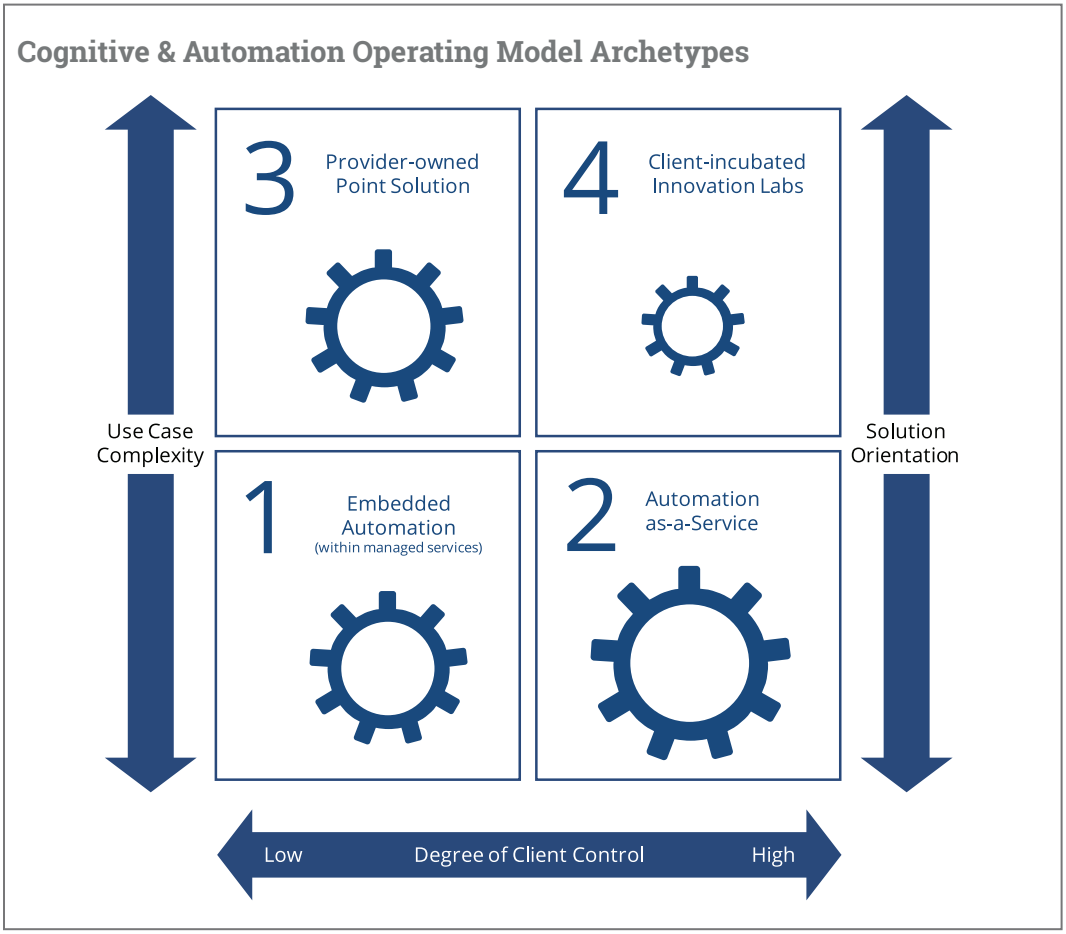
While automation solutions have shown to help achieve the first of these, cognitive solutions in a variety of different forms, including artificial intelligence, machine learning and decision automation, help achieve the second.

In today's market, available automation and cognitive solutions are at differing levels of maturity, making it difficult to know which will work best in a given environment or for a specific objective. Enterprises need to reap the efficiency gains of some robotic process automation (RPA) solutions in the short term, while they experiment and solve complex and higher-order problems for which more robust solutions are needed in the longer term.

OPERATING MODEL ARCHETYPES

Enterprises that are implementing automation and cognitive computing solutions in the marketplace today are using various operating models to achieve their goals. The graphic below shows how these models differentiate from one another based on the complexity of use case, degree of control and the nature of technology in question. The larger the gear pictured, the higher the maturity level of the operating model.

The three arrows framing the graphic signify the varying levels of complexity, client control and solution orientation. The optimal operating model for any given situation is typically a nuanced version of one of the four archetypes with some modifications borrowed from another. Depending on the objectives for adopting automation and cognitive computing, enterprises often find themselves interested in more than one of the four operating model solutions described here.



1. Embedded automation

In this operating model, the outsourcing service provider drives the automation initiative to achieve higher efficiencies for specific tasks in a traditional outsourced delivery model. The investments in automation and the benefits, which typically come in the form of cost savings, are shared with the client depending on the nature of the commercial model. Since the service provider drives the automation, the client has less control over the nature and degree of the solution. This model is ideally suited to uses cases with low complexity, such as invoice processing in Finance & Accounting and Level 1 support in IT infrastructure operations.

2. Automation as a service

In this model, the enterprise client identifies an objective for implementing automation and engages an automation-savvy provider to automate specific process areas to achieve the objective. To support the initiative, some enterprises create an internal Automation Center of Excellence (CoE) that engages with the ecosystem and internal business units to evangelize and manage change. Because the enterprise drives the initiative, it realizes the benefits (and savings) and simply compensates the automation provider for the services. This model is suitable for clients that prefer more control over the automation initiative

and for use cases that are low-to-medium complexity, such as mortgage processing that has well-defined repeatable procedures but also involves the application of human judgement through exception handling. Automation-as-a-Service is the most mature operating model in today's market.

3. Provider-owned point solutions

Certain service providers have invested in developing best-in-class point solutions for specific domains. Most of these solutions contain elements of cognitive technology, such as social listening for marketing, image matching and natural language processing. This model is suitable for cases in which the business problem is complex and there are specialized solutions available in the market. In such cases, enterprises find it more beneficial to plug in such point solutions than trying to build their own, though of course this means the intellectual property belongs to the provider or software vendor and not to the enterprise buyer. Examples can be found in areas such as healthcare, in which cognitive solutions are used in oncology/nephrology treatment, and in media and entertainment, in which cognitive solutions are helping to hyper-personalize content that is relevant to individual preferences and social media actions, and that are specific to location and time of the day. This space is rapidly evolving and consists of both established large technology providers and new-age start-up companies.

4. Client-incubated innovation labs

This operating model is ideally suited to address complex industry-specific problems for which solution components, but not whole solutions, exist. Such use cases often involve a combination of cognitive computing and other technologies, such as big data analytics, augmented reality and the Internet of Things. The first wave has focused mostly on enhancing personalization of service in consumer-oriented industries such as Healthcare, Retail, Travel, Media and Entertainment. The applicability of these technologies is now expanding into such industrial sectors as Oil & Gas, Mining, Aerospace and Heavy Equipment. Given the iterative nature of such pursuits, this model works when a buy-side enterprise partners with a capable provider to set up a joint innovation lab to develop a custom solution with an agile approach. The ownership of the intellectual property and commercial model depend on the capabilities and investment of the two parties. Though the client-incubated innovation lab model is the least mature in the market today, it shows the greatest promise for taking advantage of cognitive software solutions that provide competitive advantages.

DESIGN PRINCIPLES FOR SUCCESSFUL IMPLEMENTATION

Choosing the best-fit model for a successful automation and cognitive computing journey requires considering many variables. These variables can be summarized into the following five categories, and each has its own corresponding principle for designing the best-fit operating model.

Your Objectives

Create a tailored operating model that can help achieve your specific objectives—not a one-size-fits-all solution. For those areas in which you want to achieve higher effectiveness, you will want to look into the potential of an automation solution. For those in which you want to solve complex problems, consider cognitive computing. A leading multinational bank, for example, found a robotics process automation solution in the Automation-as-a-Service operating model to be suitable for its operational efficiency transformation, while it is implementing a provider-owned cognitive point solutions to achieve better customer engagement through analytics.

The Market

The provider landscape will likely be dynamic over the next few years with significant chances for acquisitions and product consolidation. Most first movers in the automation and cognitive solution provider space are young, independent software companies. In an effort to protect and gain market share, traditional IT and BPO providers are aggressively building capability in this space, either by organic or inorganic means.

With this in mind, choose a solution that is both flexible enough to alternate between operating models and vendors and scalable enough for organization-wide adoption. Enterprises need to build necessary contractual clauses that enable flexibility in the areas of intellectual property rights, innovation of third-party contracts and termination assistance.

The Maslow's Hammer Syndrome

Be wary of providers that aggressively propose automation and cognitive computing solutions as a panacea for all business problems. To differentiate themselves, some service providers promise unrealistic cost savings through embedded automation they combine with traditional levers, such as the rationalization of their own organizational pyramid.

Be realistic about the use cases, potential benefits and limitations of any solution based on where it is in its product lifecycle and the maturity of the solution. In many cases, the operating model also will need to be adjusted based on stage of maturity of the solution being implemented. For instance, a complex industry-specific solution may be initially developed in the Innovation Lab model, and when it has reached a pre-defined set of conditions—including solution maturity, proof points and value realized—it may move to a Automation-as-a-Service operating model. Successful enterprises design operating models that include a phased approach to their automation and cognitive journey supported by value realization tracking and governance.

Pricing Models

Pricing models are highly diverse now, ranging from price per bot to pricing based on outcome, and these models will evolve and stabilize over the next 12-18 months. Some automation solutions are currently priced in a way that compares the cost of a full-time employee with the cost of a software bot.

When negotiating pricing, be sure to drive the commercial structure that produces the most visible benefits and is adaptable for more complex use cases. Enterprises need to closely evaluate the real costs of a bot, including what costs is takes out and how much it costs to maintain or upgrade over time. When evaluating options, mature enterprise buyers should also understand and evaluate the underlying cost drivers of the service provider, including both the fixed and variable cost elements.

Change Management

When introducing automation and cognitive computing solutions to the enterprise, some business units will need to be persuaded of the value and the potential gain to be had from these technologies in their business or process area. This is especially true if the adoption of robotics or automation implies job losses.

Be sure to take a structured and holistic approach to organizational change management by increasing awareness, getting buy-in for the program and addressing the expected resistance to change through articulation of the benefits and the internal and external proof points. The internal core team (often found in the Automation or Cognitive CoE) needs to take ownership of building organization-specific proof points, adopting playbooks, including internal and external commercial constructs, and acting as the internal evangelists who can articulate the art of the possible with the implementation of new technology and its associated business value.

Robotic automation has delivered 20-50 percent direct savings, even in mature offshore delivery situations.

CONCLUSION

Robotics has for some time been an integral part of the manufacturing shop floor, important in science exploration and has led to advances in healthcare by expanding the capability of human workers. Over the coming years, automation and cognitive computing solutions will continue to make traction in the IT and business process services industry where the benefits of these technologies will soon become business as usual. Some early adopters across industries and geographies are already embracing these solutions and reaping the value.

The first step on the journey toward automation and cognitive computing is understanding and refining your business objectives, discerning solution suitability and maturity, gauging adaptability to the enterprise and cultivating organizational dexterity to seamlessly integrate the traditional and new ways of achieving business goals.

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