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Build the AI Business Case

A CIO's guide to building the strategy and business case to implement AI in the enterprise

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Introduction

Artificial intelligence (AI) is still the stuff of the future for some organizations. But strategic integration and experimentation with AI has already led to new revenue, better business models and innovative products. You can create and implement a plan for AI in your business. Embrace the challenge. Experiment and introduce the technology to the board and to your employees.

With this e-book, CIOs will learn how to create a business case for AI, how to harness current trends and the importance of using good data to implement AI in the enterprise.

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CHAPTER 1

Build Your AI Business Case

When a company realized that up to 30% of calls it received were from customers asking about order status, its leadership wanted to know if AI would be able to help manage the interactions. The short answer was yes, a virtual customer assistant could answer questions ranging from "Where is my order?" to "How long will I have to wait?" But the bigger question was whether AI could help the company in even more impactful ways.

"Look at how you are using technology today during critical interactions with customers — business moments — and consider how the value of those moments could be increased."

Whit Andrews
Vice President and Distinguished Analyst, Gartner

For example, the interaction between the company and the consumer provides data, such as they order X amount of Y products every Z weeks. The company can then use AI to further enrich the relationship beyond that interaction.

During future interactions, the data might enable the seller to ask questions specific to the customer, such as "We know you are frequently waiting on delivery. Would you like to subscribe to this product or order larger quantities?" AI enables companies to collect data from a wide variety of places and apply self-improving analysis that can take action — and on a level of granularity never before available.

A recent Gartner survey of global CIOs found that only 4% of respondents had deployed AI. Gartner estimates that by 2020, AI will be a priority for more than 30% of CIOs. However, the survey also found that one-fifth of the CIOs are already piloting or planning to pilot AI in the short term.

AI basics

Common definitions of AI focus on automation and, as a result, often miss the hidden opportunities available to IT and business leaders. AI is technology that emulates human performance, typically by learning from it.

The most common mistake with AI is to focus on automation rather than including augmentation of human decision making and interactions. If CIOs focus only on further automation via AI, they miss the hidden opportunities for greater personalization and differentiation. AI can augment humans, as it has the ability to classify information and make predictions faster and at higher volumes than humans can accomplish on their own.

CIOs should look for critical business points where human interaction or human expertise adds value. They then should consider how AI might augment those efforts to create even more value.

First, assess which business outcomes would benefit most from AI. Second, evaluate how AI might help achieve those outcomes. Normalize AI planning and development for your entire organization, including leaders of data and analytics, applications and lines of business.

Common AI applications

Typically, common AI applications analyze contextual interaction data combined with historical data in real time.

Sales and marketing: Customize the sales process, personalize communications to prospects and clients, match sales staff to buyers and offer personalized pricing.

Service: Offer virtual customer assistance and triage, predict maintenance and upcoming repair needs, connect service staff to customers and discover process gaps.

Supply chain: Discover and correct data errors, discover risks in the supply chain, elevate insights from Internet of Things (IoT) devices in the field and plan logistics.

Banking and financial services: Help customers access their bank balances using chatbots.

Healthcare: Follow up with patients post-discharge using virtual nursing assistants.

Trends in AI

Gartner expects that three trends will affect AI in the next few years.

1. Better communication (both ways) with people: Natural-language processing, generation and contextual interpretation will make AI easier to use and will improve the use of all computing resources.

2. Deeper and broader integration with existing applications and IoT projects: AI has its greatest value when it is built into architectures that drive business and service value.

3. Richer ecosystem interaction: As AI becomes more common, applications that employ it must work effectively with others employing similar technologies, which will result in chains and meshes of AI systems that work simultaneously toward their individual goals in a cooperative but decoupled fashion.

Generally, AI will trend from one-off experimental projects to an approach that integrates the technology with the business.

Gartner estimates that by 2020, AI will be a priority for more than 30% of CIOs.

Breaking down the intelligence

AI can range from low-intelligence applications like automation to higher-end intelligence capable of decision making. It can also be controlled centrally or distributed across multiple machines. What makes sense for your company will depend on budget, risk appetite, resources and other factors.

According to Jorge Lopez, Gartner vice president and distinguished analyst, AI can be broken down into five levels of sophistication:

Reactors follow simple rules but can respond to changing circumstances within limits (such as basic drones).

Categorizers recognize types of things and can take simple actions to deal with them within a controlled environment (warehouse robots).

Responders serve the needs of others by figuring out questions and situations (driverless cars, personal assistants).

Learners gather information from multiple sources to solve complex problems (Watson, wholly automated military drones).

Creators initiate a paradigm shift, such as inventing a new business model. They are not merely tools that people use. They have the potential to engineer actions harmful to humans. They will change humans' relationship to technology as well as people's roles within society and the economy. Therefore, AI creators require profound thought before development.

These five models have three types of organization:

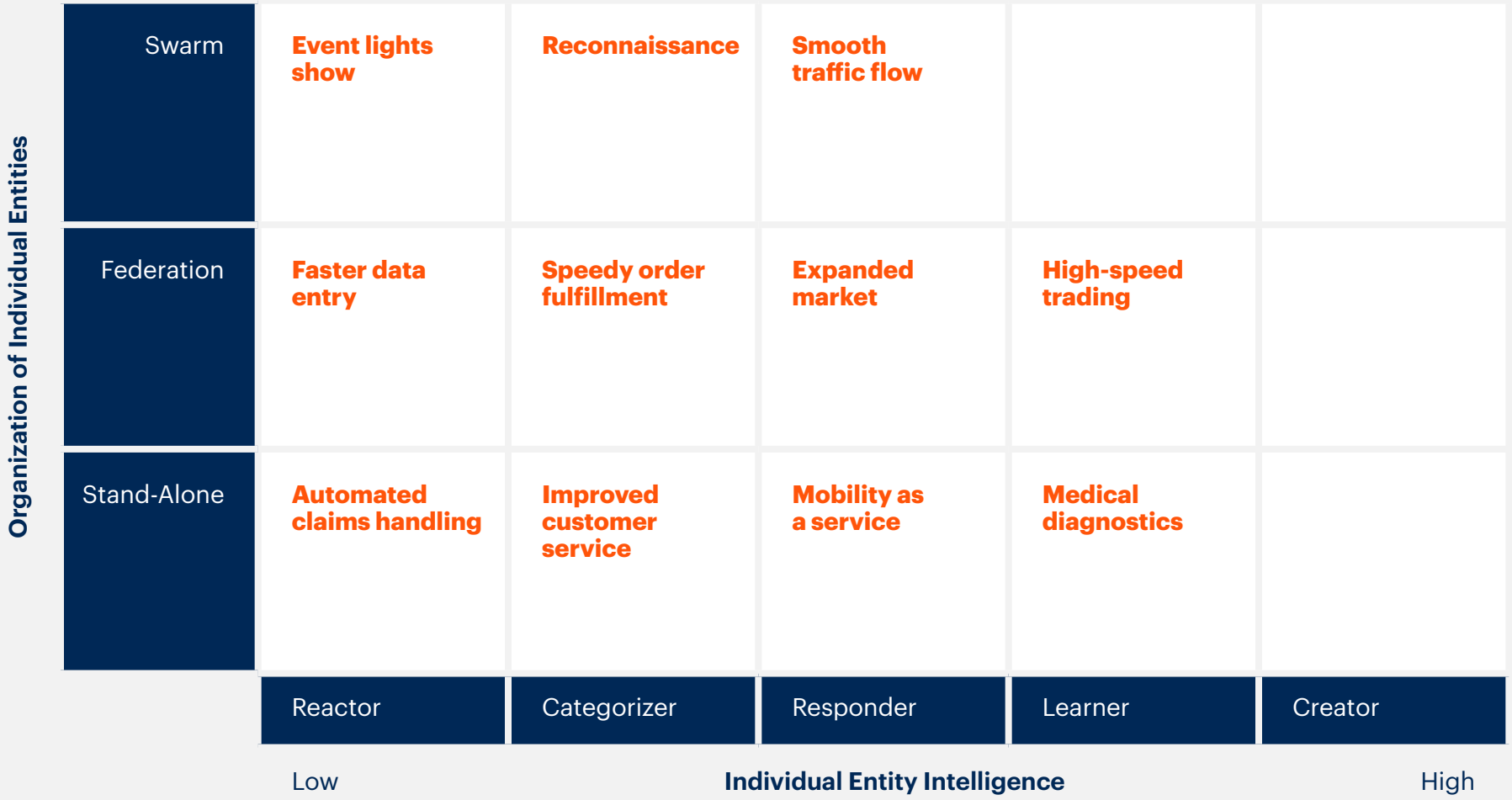
Stand-alone — The individual entity acts by itself to solve problems. The enterprise exercises centralized control over it by overseeing the entity as it performs.

Federation — Multiple versions of an entity work in the same way but on different problems (e.g., robo advisors, personal assistants). The enterprise can exercise central control or give more autonomy to the entities.

Swarm — Multiple entities work together on the same problem (e.g., Intel light show drones, Perdix drones). Control over execution is left to the machines entirely or requires only light human management.

Use Cases for AI Application Categories

AI Strategy Framework With Examples



Source: Gartner

The case for AI investment

Once you've developed a rock-solid understanding of AI and its potential applications, it's time to make a case for a pilot. Despite the enterprise-level interest in AI projects and their potential to fundamentally change the dynamics of business value, most AI technologies are nascent at best. According to a recent Gartner survey, 37% of organizations are still looking to define their AI strategies, while 35% are struggling to identify suitable use cases.

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To secure financial backing for a pilot, CIOs will need to put forward a use case. This can be particularly challenging for AI, as there is no such thing as an AI business case. Instead, the business case will be for a particular business scenario, problem or use case that employs AI methods and techniques as part of the overall solution.

Focus on answering these four questions when you want to define an AI project:

1. Why are you doing this project?
2. For whom are you trying to deliver this solution?
3. What solution and technology framework will you employ?
4. How will you deliver this project?

How AI Business Cases Differ From Other Business Cases

To build a successful business case for AI projects, CIOs need to articulate and address the specific factors around how AI projects differ from other IT solutions.

1 AI solutions can seem costly without providing any immediate gain

AI projects can appear costly without any immediate gains — particularly for loosely bound scenarios and in organizations that aren't used to setting aside budget to develop and deploy solutions for new business scenarios.

2 AI projects require different technology and problem-solving skills

Talent acquisition is likely to be one of the biggest barriers to AI adoption going forward.

Although long-term strategies should include how to leverage academic communities and open-source technologies to ease the lack of resources, the immediate priority is working out what needs to happen now. Leverage and train existing resources — particularly on data science tools — as a key strategy.

3 AI business cases will require substantial cultural change

For most enterprises, the mindset shift required for AI can lead to "cultural anxiety" because it calls for a deep change in behaviors and ways of thinking. CIOs should acknowledge the cultural change, be proactive in managing related challenges and build trust over time. Cultural change and successful transitions to new roles and practices are dependent on open dialogue and mutual respect among IT members and between management and staff.

4 The need to spend more time on data, training and algorithms

AI depends on data and the interactions of algorithms, so when it comes to AI business cases and plans, success is largely dependent on robust data and analytics infrastructure. Organizations looking to move forward with AI tech must be constantly learning and iterating on algorithms and on how to select, prepare and apply data.

How AI Business Cases Differ From Other Business Cases

5 AI is the representation of a decision model, rather than a process event

The same characteristics that make AI a good solution for dealing with data are also the attributes that make it difficult to support with a business case. Traditional analytic models use fixed rules to arrive at a conclusion. However, AI analytics use dynamic data and heuristic solutions to arrive at conclusions that might elude traditional methods. This makes them valuable, but difficult to predict.

6 The critical decision to build, buy or outsource

The decision to build, buy or outsource depends on both the project and the company. Ask these questions to decide what might work for the company: How complex is the project? What is the timeline? Is there budget available? How urgent is the need? Use the answers to make your decision.

7 AI algorithms carry new governance demands

AI is a tricky technology because algorithms can operate independently of human actors. This means that they must act on behalf of all actors. Ensure transparency and openness in all decisions. Furthermore, ensure that governance discussions happen in parallel with technology discussions.

Explaining AI to the C-suite

At a conference on leadership, a CEO of a large wealth management firm attended a session on AI. She learned that other firms were using robo advisors to offer low-cost wealth management to clients without enough holdings to justify using a traditional wealth management firm. Recognizing the potential revenue growth, she asked the CIO to create a presentation for how AI could help the company.

At some point, most CIOs will be called to explain AI to the CEO and executive board.

"Create a version of the Gartner AI strategy framework, with examples of each category of AI application that are relevant to the enterprise's business. It will help you prepare strategic options that you can recommend to the CEO."

Jorge Lopez
Vice President and Distinguished Analyst, Gartner

The CIO needs to speak in the language the CEO speaks, which is how AI will help the business strategy. The CIO has to understand both the technology and the potential business impact of it, and be able to relay that in business terms to executives.

Address how the technology will enable CEOs to reach their objectives to save money, grow revenue, increase operational efficiency or innovate products. For example, a large mining company is using AI to control 69 driverless trucks at mine sites. The trucks are controlled from a centralized operations center, offering reduced head count and cost savings. In this example, the focus should be on the savings from reduced personnel, not necessarily how the technology controls the driverless trucks. CEOs need to hear how AI will address mission-critical priorities to justify resources.

For a presentation, use real-world examples to showcase how the technology could affect the business. This will allow for strategic suggestions related directly to the business and help shape an action-oriented plan. Offer concrete solutions, instead of theoretical technologies, when speaking to the business.

For example, when a global cosmetics firm wanted to innovate, the company acquired a startup that enables customers to try on makeup virtually and offers personalized options for products to purchase. The acquisition enabled the company to keep up with the modern customer and increase the number of product suggestions.

CHAPTER 2

Implement AI Technology

After six months of planning, Kelly, a CIO at a global finance company, got the green light from the CEO to explore what AI could do for the company. In her presentation, she explained that AI could innovate offerings for clients to include options like automated trading, and chatbots could cut down on the volume of basic questions call centers received. Now, Kelly needs to bring those ideas to life.

"Gartner predicts that, by 2022, enterprise AI projects with built-in transparency will be twice as likely to receive funding from CIOs."

Whit Andrews
Vice President and Distinguished Analyst, Gartner

Learn from other companies

When initiating an AI project, look to take advantage of lessons learned by other companies.

Be realistic about a timeline

Once you have approval from executives, it can be tempting to think a pilot project will follow quickly. Organizations tend to underestimate how long it will take to overcome complexities and get AI off the ground. In fact, according to results from our 2017 Annual Enterprise Survey, 58% of respondents in companies currently piloting AI projects say it took two or more years to reach the piloting phase, and only 28% of respondents reported getting past the planning stage in the first year.[1]

Expected vs. Actual AI Project Planning Time

Source: Gartner
1. 2017 Annual Enterprise Survey

What lessons can we learn from these early AI pioneers?

Aim for fairly "soft" outcomes, such as improvements to processes, customer satisfaction, products or financial benchmarking

When Gartner Research Circle respondents were asked what lessons they had learned from early AI projects, many urged others not to fall into the trap of seeking only immediate monetary gains. They advised instead to aim initially for less-quantifiable benefits from which financial gains would eventually arise. These might come from "softer" or more "open" outcomes, such as improved marketing or brand identity, or they could lead to wider benefits altogether.

Some companies need to demonstrate financial benefit to initiate an AI project. In such cases, it makes sense to pursue small-scale plans likely to deliver small-scale payoffs that will offer lessons for larger implementations.

Focus on worker augmentation, not worker replacement

AI's potential to reduce staff head count attracts the attention of senior business executives as a potential cost-saving initiative. A more informed expectation, however, would be for applications that help and improve human endeavors, as AI promises benefits far beyond automation. Organizations that embrace this perspective are more likely to find workers eager to embrace AI.

Plan for the transfer of knowledge from external service providers and vendors to enterprise IT and business workers

External service providers can play a key role in planning and delivering AI-powered software. When using an external service provider, knowledge transference is crucial. Organizations need to plan for the transfer of knowledge from external service providers and vendors to enterprise IT and business workers throughout the execution of projects. This will ensure that the internal skills are available to develop similar capabilities in the future.

Choose AI solutions that offer means of tracking and revealing AI decisions

It's important to opt for AI solutions that offer means of tracking and revealing AI decisions — ideally using action audit trails and features that visualize or explain results. To that end, Gartner predicts that by 2022, enterprise AI projects with built-in transparency will be twice as likely to receive funding from CIOs.

Start small; don't worry about immediate ROI

CIOs should begin with small experiments that are purely for learning. Lose the pressure to get an initial ROI and use the time to pilot projects that employ a variety of technologies to assess which make the most sense for the business.

Also, expose the business to available AI options. Drop an Alexa, Cortana and a drone in a room and tell employees to play around with the toys. Reach out to software companies to gain access to free cloud demo environments and let employees experiment without the pressure of needing an immediate return.

Own the governance and the skills

Recent breakthroughs in machine learning, big data, computer vision and speech recognition are increasing the commercial potential of AI. But AI requires new skills and a new way of thinking about problems. IT must own the strategy and governance of AI solutions.

Pilot AI experiments can start with a small investment of skill and resources. Full production rollout requires a bigger investment in building and retaining the necessary talent. These skills include technical knowledge in specific AI technologies, data science, maintaining quality data, problem domain expertise and skills to monitor, maintain and govern the environment.

CHAPTER 3

Build the Right AI Data

Given the pervasive nature of the technology, the consequences of IT getting AI right or wrong are potentially profound. When used incorrectly, AI can unintentionally reinforce harmful biases, increase polarization and result in other damaging consequences.

"With the excitement for and hype surrounding the possibilities of AI, it is easy to focus on the technology and coding disciplines — what might be considered the 'artificial' aspects."

Alan D. Duncan
Vice President, Gartner

Build the case for data literacy as a new core competency for both creators and consumers of AI. Follow three steps: Build AI right, use AI right and keep AI right.

Build AI right

To "build AI right," it is key to first establish the basic vocabulary of AI — a technical dialect of how people "speak data." At the very least, CIOs should determine the primary terms used when describing an AI system or solution, including the purpose or reason that the AI solution is being developed, as well as other key terms, such as the types of data used and gathered from the solution.

Use AI right

The information language barrier can exist locally or systemically, regardless of program scope or organizational maturity. Addressing it requires a mindset shift, as well as deliberate acknowledgment and intervention to course-correct. To make data literacy more explicit, CIOs should develop a data literacy program.

- Identify fluent and native speakers who speak data naturally and effortlessly. Fluent speakers should be adept at describing contextualized use cases and outcomes, the analytical techniques applied to them and the underlying data sources, entities and key attributes involved.
- Identify skilled translators. Classic translators are often enterprise data or information architects, data scientists, information stewards or related program managers.
- Identify areas where communication barriers are inhibiting the effectiveness of data and analytics initiatives. Pay particular attention to business-IT gaps, data-analytics gaps and veteran-rookie gaps.

- Actively listen for business outcomes not clearly articulated in terms of explicit action. What business moments are being enabled with enhanced data and analytics capabilities? What operational decisions are being improved?
- Identify key stakeholders requiring specialized translations. To assess data literacy levels, ask key stakeholders to articulate the value of data as a strategic asset in terms of business outcomes, including enhanced business moments, monetization and risk mitigation.
- Identify and maintain a list of words and phrases. Engage the data and analytics team in crafting ways to better articulate these phrases.

Keep AI right

Not even the most successful companies can afford to think they are immune to ethical mishaps. Extensive and explicit discussion is needed to distinguish between the types of ethical questions and dilemmas one can face versus the actual ethical position one can take.

Take a step back and absorb digital ethics and digital connectivism as a philosophy for the improvement of digital business — and digital society more generally.

Actively look for ethical case studies relating to the use of data in AI, as the ethical questions that confront you are often not new. Opportunities include competitive differentiation and a superior value proposition; dangers include reputational risk, regulatory issues and financial losses.

Use AI algorithms and data exchange as enablers of digital interactions, and a way to enable stakeholders to participate in an ecosystem rather than as specific process controls. Encourage everyone contributing their data within the AI environment to be active participants in a mutually beneficial ecosystem.

Conclusion

AI offers great potential to companies and CIOs who implement it well.

Focus on three main tasks when developing an AI strategy. First, link the technology with the business strategy and desired business outcomes. Second, decide how to implement the technology across the business. Finally, facilitate the transition from planning to implementing by researching early AI projects and lessons learned.

Now is the time to experiment and think about how the technology could influence your business model of the future. Remember to think in terms of outcomes, not technology, and articulate the reasons an executive board should invest in AI now versus later. Finally, look to bring on or seek out specialized skill sets to handle the data influx and new technology.

Additional Research

Chapter 1

Smarter With Gartner articles

How to Build a Business Case for Artificial Intelligence
Moutusi Sau, April 2018

The CIO's Guide to Artificial Intelligence
Whit Andrews, January 2018

Client research

Seven Factors That Make Business Cases for Artificial Intelligence Projects Different
Moutusi Sau, Whit Andrews, Alan D. Duncan, February 2018

A Framework for Applying AI in the Enterprise
Bern Elliot, Whit Andrews, June 2017

Craft an Artificial Intelligence Strategy: A Gartner Trend Insight Report
Whit Andrews, January 2018

How CIOs Can Analyze the Strategic Possibilities of AI
Jorge Lopez, January 2018

Guide CEOs Toward an AI Plan Based on the Business Strategy
Jorge Lopez, January 2018

Develop Your Artificial Intelligence Strategy Expecting These Three Trends to Shape Its Future
Whit Andrews, April 2017

Chapter 2

Smarter With Gartner articles

Lessons From Artificial Intelligence Pioneers
Whit Andrews, February 2018

Chapter 3

Smarter With Gartner articles

How to Get Artificial Intelligence 'Right'
Alan D. Duncan, April 2018

Client research

Artificial Intelligence Demands That CIOs Foster a Data-Literate Society
Alan D. Duncan, January 2018

Notes:

2017 Annual Enterprise Study

1. This study was conducted to further understand the current enterprise technology landscape, with this section focusing specifically on the perspective of more senior-level employees. The research was conducted online from November 2017 to December 2017 among 1,990 total respondents in organizations with more than 20 employees located in the United States, U.K., France, Brazil, China and India. Of those, 890 respondents qualified to answer the Artificial Intelligence (AI) section.

To qualify for the AI section, respondents were required to be from an organization that is currently investing in AI (no description/limitations on investment), report that they are at least in the planning stage and be personally involved in any of these decisions: Implementation, planning/budgeting, evaluating vendors or setting strategy.

The results of this study are representative of the respondent base and not necessarily the market as a whole.

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