How to Identify High-Value AI Use Cases in Digital Commerce

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Artificial intelligence can enhance digital commerce performance and improve customer experience. Unlocking that value requires application leaders to identify high-value use cases, fail fast and build organizational trust in AI.

Key Challenges

- Organizations need to improve digital commerce performance, customer experience and operational efficiency as the competition gets tougher and customers have higher expectations.
- Application leaders are asked to investigate how artificial intelligence (AI) helps improve digital commerce performance; they see various solutions in the market and wonder which ones will deliver the best value for their organization.
- Employees don't necessarily follow predefined processes or take advice from AI applications when they need to work together; they often rely on habits and gut feelings.

Recommendations

Application leaders supporting digital commerce technologies:

- Document a pool of use cases that are pain points because they are repetitive and/or involve complex decision making and can be measured against business objectives.
- Prioritize use cases of higher value — those that are more complex, frequently used and ready for commercial production.
- Ensure vendors can deliver by reading their case studies, talking to references, asking for demos, getting peer feedback and running pilots in Mode 2.
- Build management and employee trust in AI by explaining the reasoning and showing effectiveness of the solution. Align employee incentives to the shifts in work patterns due to AI.

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Strategic Planning Assumptions

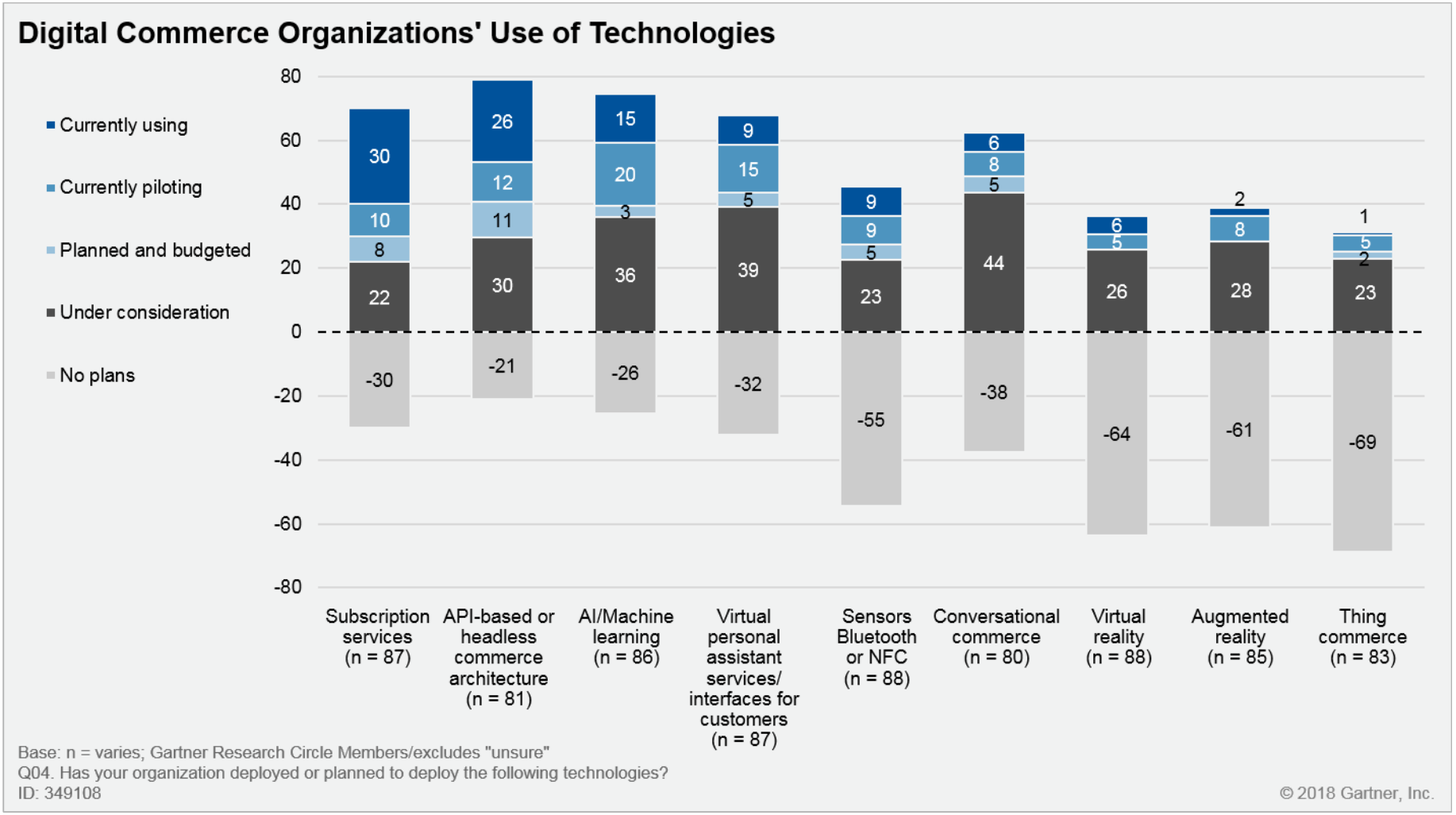
By 2020, artificial intelligence will be used by at least 60% of organizations for digital commerce.

By 2020, 30% of digital commerce revenue growth will be attributable to artificial intelligence technologies.

Introduction

Digital commerce is an area where AI technologies will play an important role. It generates a large amount of data, involves complex decision-making processes, has a short window of opportunity to convert visitors and has a direct impact on the business performance. In Gartner's Digital Commerce State of the Union survey conducted among respondents from organizations using digital commerce platforms, 35% say their organization is piloting or using AI/machine learning (ML) (see Figure 1).

Figure 1. Digital Commerce Organizations' Use of Technologies



Source: Gartner (March 2018)

Digital commerce organizations can benefit from five aspects of investing in AI (see "How to Apply Artificial Intelligence to Digital Commerce"):

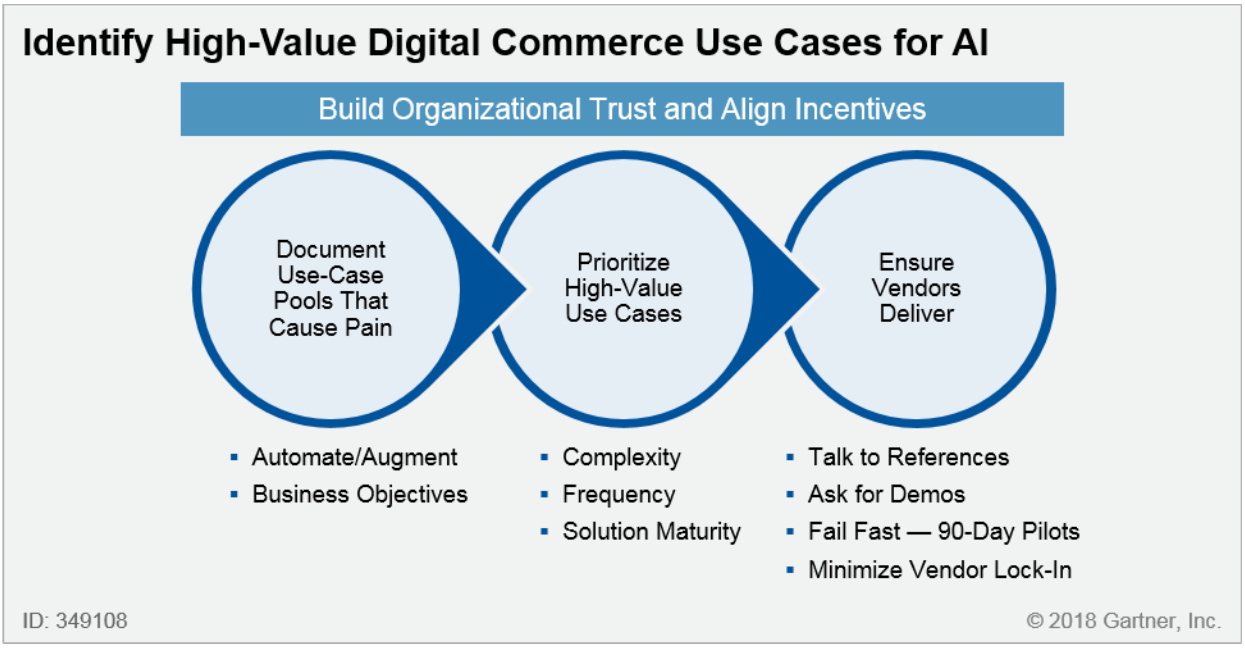
1. Improved efficiency in identifying underlying relations between datasets, such as the relationship between page views, session duration, shopping cart items and conversion rates.
2. Faster, more accurate completion of defined processes, such as demand forecasting.
3. Ability to deal with large amounts of multifaceted data, such as product and image categorization, customer reviews, and search.
4. Ability to provide more granularity in the analysis, such as customer segmentation, sentiment analysis and personalization.
5. Frequently updating models to quickly respond to changes in customer and market behavior, such as fraud detection and website optimization.

Organizations need to be aware that AI including ML technologies has been around for decades and it is only in recent years that DNN, an ML method, has made big advancements and has the potential to greatly improve AI performance. However, most such advancements are still in the lab stage with few live productions. Vendors have made AI and ML core ingredients in their marketing pitches, though many are yet to prove results in the field in comparison with existing technologies. This is a turbulent market, and many smaller vendors will come and go at a fast pace. Application leaders need to be fully aware of the hype and understand the value they can get if they invest in AI applications.

At the same time, application leaders should not sit and wait for AI to mature. The market is fast-evolving with leading digital organizations making bold moves by investing in emerging technologies via in-house development, partnerships or acquisitions. It is important to understand how these new technologies can be applied to your business and their impact. Being a digital leader or fast follower will allow your organization to quickly capitalize on the latest AI development and place you in a better position to embrace new opportunities when the technologies are ripe for mass deployment.

This research outlines best practices (see Figure 2) for application leaders to identify use cases that can deliver high value and ensure successful adoption by the employee.

Figure 2. Identify High-Value Digital Commerce Use Cases for AI



Source: Gartner (March 2018)

Analysis

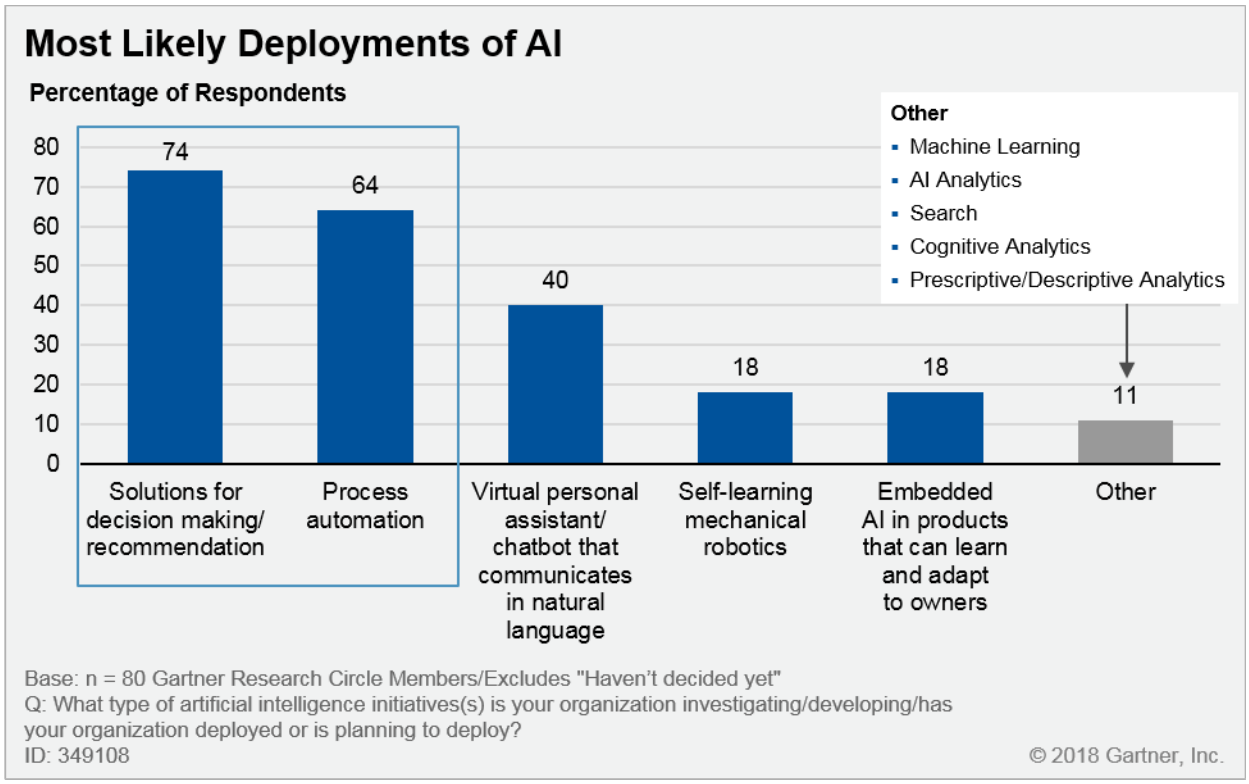
Document a Pool of Use Cases That Cause Pain

Organizations need to first identify a pool of candidate use cases for AI investment by looking at two dimensions. The first dimension is the nature of the digital commerce operation, and whether it involves complex decision making or repetitive tasks. Use cases involving complex decision making or repetitive tasks are often the pain points that make them good candidates for AI technologies:

- **Augment people for complex decision making.** These operations often involve multifaceted data or information sources, and rely on complicated processes and models to arrive at a decision. Examples include content personalization, search and product recommendation, price optimization, demand forecasting, and customer journey analysis.
- **Automate repetitive tasks.** These operations can involve heavy manual operations and/or tedious analysis on a regular basis. Examples include customer service for basic inquiries, product categorization, customer segmentation and fraud detection. Some use cases can also be complex, such as customer segmentation and fraud detection that tend to involve a large volume and variety of data. This is an area where AI can automate the operation.

Gartner's 2017 AI Development Strategies Survey shows that the most common uses for AI were to improve decision making (74% of respondents) and to automate processes (64%) (see Figure 3).

Figure 3. AI Is Most Likely Deployed for Decision Making and Process Automation



Source: Gartner (March 2018)

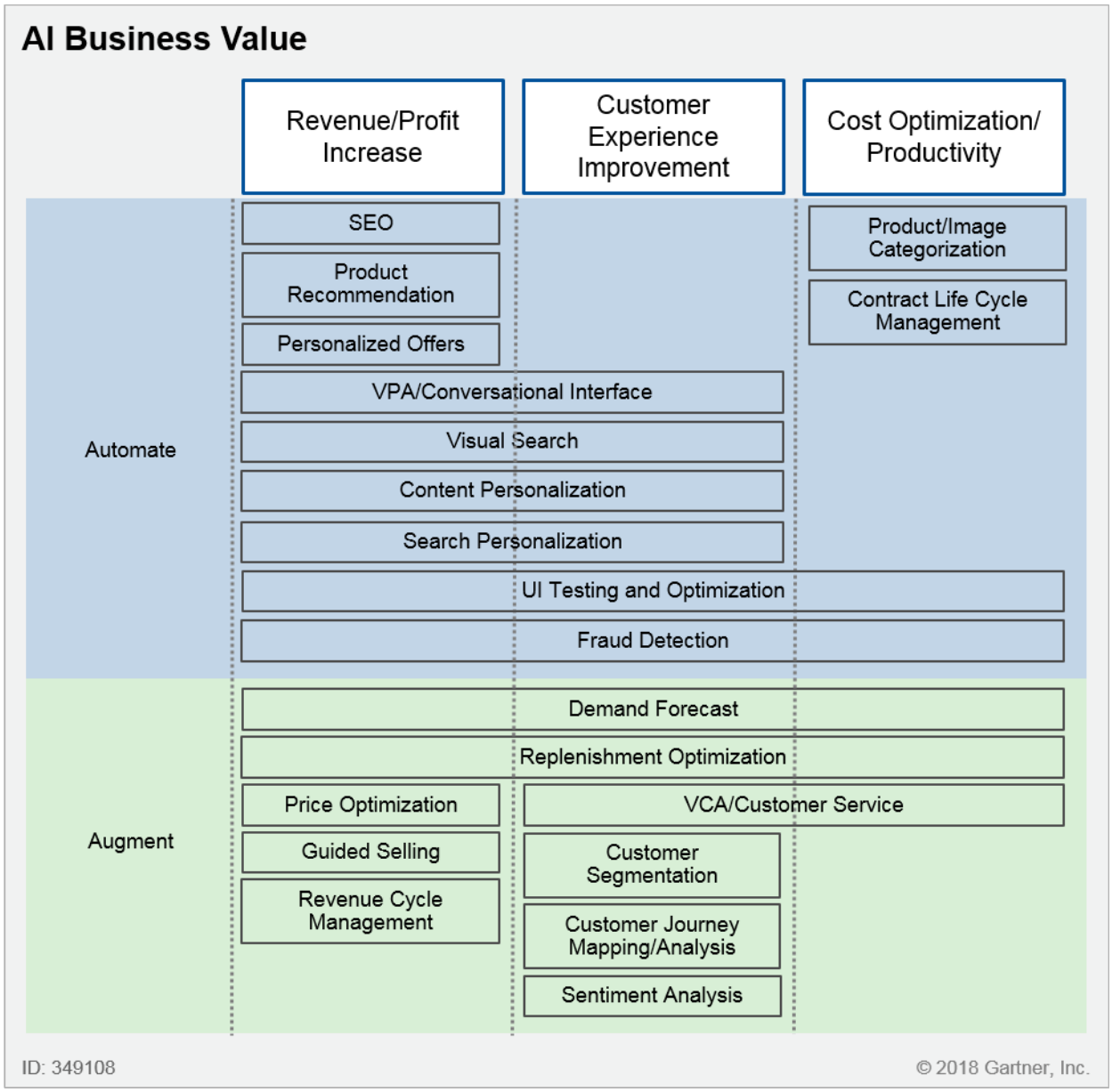
The second dimension is the business objectives that include:

- Revenue/profit increase
- Cost optimization
- Customer experience improvement

As part of data and analytics initiatives, AI will be measured against these metrics where improvements are more readily recognized by business leaders and executives. Gartner's survey of data and analytics initiatives organizations invested in the last two years shows that more than 70% of organizations use revenue, costs and customer services as business value measurement of their data and analytics investment.

Organizations can identify a pool of use cases that address their pain points and that can be measured against the business objective. Figure 4 is an illustration of typical use cases in digital commerce, and organizations can identify others that are specific to their industry or business.

Figure 4. Business Value Dimension for Digital Commerce Use Cases



Source: Gartner (March 2018)

There are two things to note when doing the mapping:

- The same use case has different implications to different businesses. For example, organizations with a large number of SKUs and operations in multiple geographic locations can have very complex demand forecast that may involve a lot of data and manual operations with low accuracy. This can lead to operational inefficiency and missed revenue opportunities. This scenario is a good candidate for experimentation to determine if AI can reduce operational

costs and increase revenue while improving the decision-making process. In contrast, a commodity producer may have a straightforward demand forecast process that can be well-handled by existing technologies; thus, it doesn't fit into the automate/augment dimension, making it not a good candidate for AI.

- Use cases mapped into multiple areas don't necessarily deliver more value than those in a single area. For example, fraud management can be configured to increase revenue/profits, improve customer experience and reduce costs. Organizations should choose one objective to focus on at a time because business rules supporting different objectives can sometimes contradict each other. In this case, increasing revenue and reducing costs may require different thresholds for false positive rate depending on the margin, which makes the model difficult to achieve either objective.

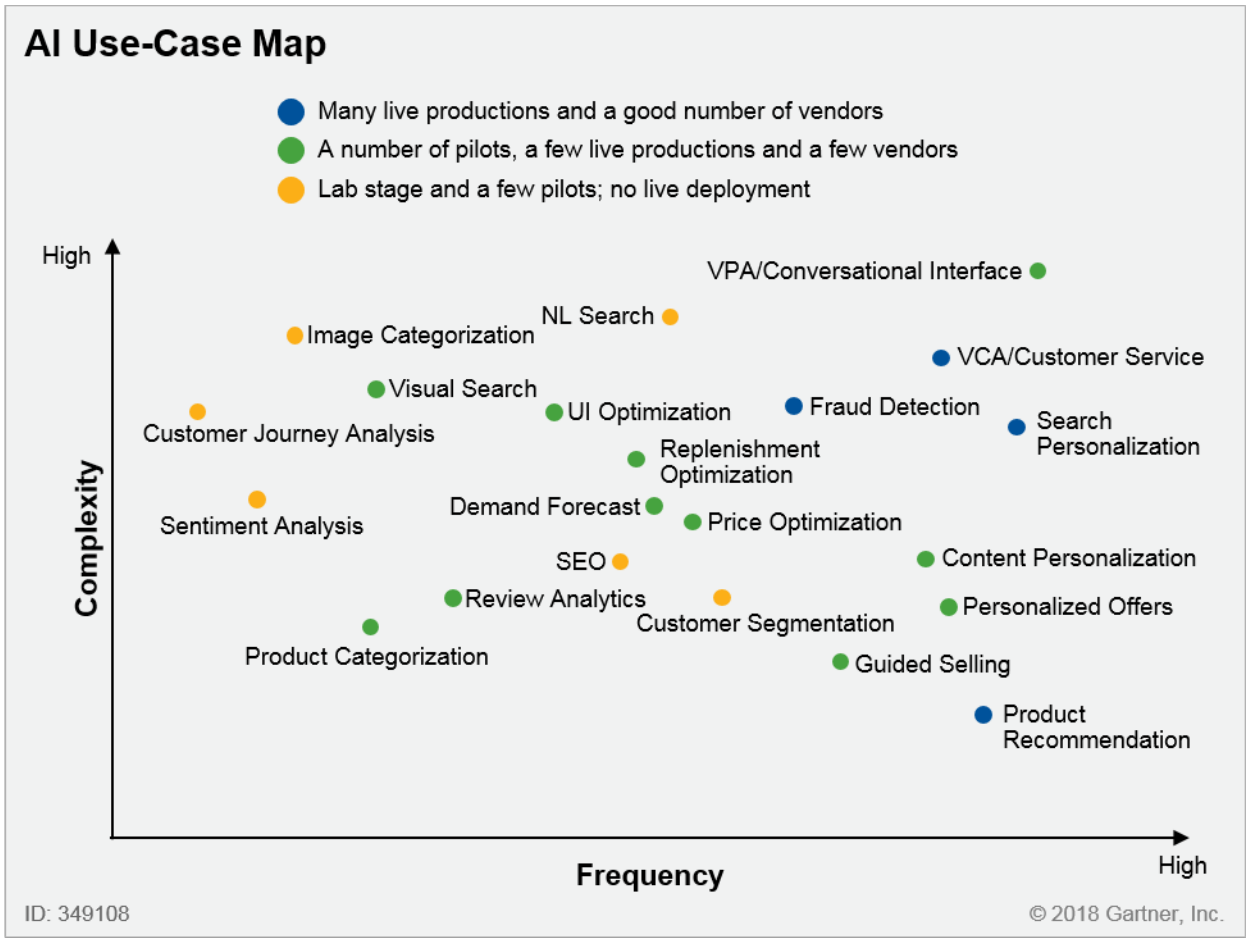
Prioritize Use Cases of Higher Value

Use cases that will deliver high business value that are good fits for AI technologies tend to be those that have the following three characteristics:

- **Complex:** These use cases need to incorporate a large volume and variety of data at high velocity or are difficult to achieve with traditional technologies. Examples include content personalization, price optimization, voice/visual search and natural language processing/understanding.
- **Frequently used:** Processes that need to be frequently refreshed or require fast or real-time response to external factors are good candidates for AI. Many customer-facing use cases, such as search and product recommendation, content personalization, price optimization, and fraud detection, satisfy these criteria.
- **In a more advanced state of development:** Some use cases see several live deployments with a good number of vendor offerings, while others are in the lab stage with no live production or only a couple of vendors. Many organizations don't have the resources to develop their own AI solution and will choose to buy from the market. Even large organizations that have the resources and ambition to build their own AI technology suggest, at a minimum, investigating the vendor solution before venturing out on their own so they are aware of what's available in the market. When building their own solution, organizations may partner with vendors for certain technology elements rather than build the complete solution themselves. Using performance-proven solutions and help from experienced service providers will deliver results in a shorter time frame.

Figure 5 is an illustration of digital commerce use cases that are likely to deliver higher business value.

Figure 5. High-Value AI Use Cases for Digital Commerce



Source: Gartner (March 2018)

Organizations can more easily identify the complexity and frequency of use cases by examining the decision-making process, the volume and variety of datasets used, and how often the function is triggered in the digital commerce operation. Determining the development stage is more challenging, as information regarding AI vendors and deployments can be hard to gather and verify, especially because many AI vendors are startups. In general, digital commerce AI use cases can be put into three development stages (as depicted in Figure 5):

- **Commercial-ready (blue dots):** These solutions see scores of vendors with a good number of reported live deployments. They have published case studies and customer testimonials about the effectiveness of the solution. These solutions tend to focus more on customer-facing or cost/productivity use cases that lead to immediate business benefits, and which are often in more demand. Examples include conversational interface for shopping and customer service, search and product recommendation, and fraud detection.

- **Early commercial (green dots):** These solutions are mostly in the pilot stage with a handful of vendors doing live deployments. Examples include content personalization, product review analytics, demand forecast, replenishment optimization, price optimization and guided selling.
- **Lab-pilot (yellow dots):** These solutions are mostly being developed (i.e., on the roadmap) with a few pilots. They include technologies that are more challenging, such as visual and facial recognition, natural-language understanding/natural-language processing (NLU/NLP), and back-office operations that don't lead to immediate revenue or cost benefits. Examples include NL/visual search, image/product categorization, customer segmentation and customer journey analytics.

Follow these steps to get a feel of the development stage of the use case:

- **Conduct secondary research:** Gather information from public sources regarding the general stage of AI development for the applications of interest. Look through top AI vendor/award lists to find potential candidates. More importantly, speak to Gartner for a reality check of where the market is.
- **Talk to your existing digital commerce vendors:** Determine whether these technology vendors have employed ML in their solutions and whether they have live production. Ask for customer references and case studies.
- **Talk to your service providers:** Ask your trusted service providers how many AI projects they have implemented and in which areas, how much experience they have, and the results achieved.
- **Talk to peers:** Learn from peers regarding where they are in investing in AI solutions and what use cases they are considering.

Application leaders can use scoring to determine their readiness of AI for various use cases. Consider the number of pilots, deployment, production and vendors, as well as validation from Gartner and their peers.

Ensure Vendors Deliver on Their Promises

Once you've chosen the use cases, look for vendors that can deliver:

- Talk to reference customers to get feedback on the solution capability and operational implications during implementation.
- Ask for demos from the vendor, and make sure the demo is relevant for the use case and your business.
- Run pilots with shortlist vendors.

A pilot is the quickest way to tell whether the solution works for your organization. Vendor capabilities vary, even for green-dot use cases. Depending on the AI technologies used, training and configuration process, combination with rule engines and analytics tools, some vendors can deliver big-step improvement using AI while others may see moderate results. Run pilots to see whether the vendor can deliver on the promises. Pilots should be no more than 90 days. Using the minimum

viable product approach, application leaders should employ the "fail fast" method to learn from failure and quickly iterate.

The turbulent nature of the AI market makes it imperative that organizations run AI projects in Mode 2. This depends on how the digital commerce team is organized. The projects can be done by joint business-IT teams to quickly get feedback on business results, or within the IT team to understand how the technology performs in comparison with existing digital commerce solutions.

Look for vendors that offer end-to-end solutions where they consolidate and clean your datasets, train the model for your organization's specific case, fine-tune the configuration to achieve predefined metrics, and are responsible for ongoing maintenance. Ensure that you retain ownership and control over the training data and any derivative products. Look for those that provide a lightweight API integration with your current stack, usually via a cloud SaaS model. Use the same business metrics as other digital commerce investment to ensure that vendors deliver tangible business results rather than just show off technology functions. See "How to Manage Digital Commerce Metrics" for more details.

Build Organizational Trust in AI and Align Employee Incentives

Top or mid-level management may not have confidence in the AI performance and may also feel uncomfortable that some of the decision-making power will be automated. Use demos and pilots to show the effectiveness of the technology, and show success examples from the competition and other industries. Focus on business results improvement rather than just showing the technology function. This helps build trust in AI among top management.

Frontline employees can feel uncomfortable because they have to take advice from the machine or part of their job is to help train it and then may be replaced by it. To build employee trust, design the application to show transparency and effectiveness:

- **Show transparency:** Explain the reasons and logic for advice made by the AI application. For example, customer service reps can be prompted by the AI regarding the customer behavior/ profile and the most appropriate answers. Give explanations such as: "Eighty percent of the customers with such a profile are likely to be interested in product A." Another example is in guided selling where salespeople don't necessarily follow the suggestions and instead rely on gut feelings. This can lead them to ask for big discounts to close a deal. The application can give transparency such as: "Eighty percent of small to midsize business clients purchase this product bundle with a 5% discount."
- **Show effectiveness:** Employ A/B and multivariate testing to show how AI improves the results. For example, in product recommendation, let employees recommend some products that are placed alongside those suggested by the machine, and compare the conversion rate or other predefined metrics. For guided selling, let the sales team volunteer into two groups, with one using the existing sales process and the other using the AI solution, and compare performance. Typically, employees are more willing to adopt AI when they see the impact it has.

Organizations should adjust employees' key performance indicators (KPIs) to get people into the habit of working with machines. Employees should be rewarded and incentivized for their effort in helping machines to "learn" and become more effective:

- At the early phase of deployment, focus on measuring behavioral changes using process and qualitative metrics rather than results-oriented or financial metrics. For example, measure the number of advice employees take from the machine, even advice that may lead to lower performance. Reward people when they provide feedback to the system as to how the model can be further improved.
- As acquired behaviors become the new norms and employees applying AI reach closer to the desired level, results-oriented and performance metrics are more feasible. For example, measure the time customer service reps spend answering complex questions and training the machine, and reward them for improvement in customer satisfaction and/or the relevance of the suggestion made by the machine.

Understand how the picked use case will impact business processes and organizational behavior, and design mechanisms to encourage adoption, even before you deploy the technology. This ensures a higher success rate of your AI investment.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"How to Apply Artificial Intelligence to Digital Commerce"

"Questions to Ask Vendors That Say They Have 'Artificial Intelligence'"

"Innovation Insight for Conversational Commerce"

"Information as a Second Language: Enabling Data Literacy for Digital Society"

"Beginning Bimodal: Lighting the Mode 2 Candle in a Mode 1 World"

"How to Manage Digital Commerce Metrics"

"Scaling Digital Commerce Into a Digital Platform Business"

"Use Personalization to Enrich Customer Experience and Drive Revenue"

"How We Will Work in 2028 Demands Change in How We Will Reward"

Evidence

Digital Commerce State of the Union Survey: This research was conducted via an online survey from 24 October through 7 November 2017 among Gartner Research Circle Members — a Gartner-managed panel composed of IT or IT-business professionals. In total, 88 members from organizations currently using a digital commerce platform completed the survey. Qualified

participants included business end users with IT, IT-business or business focus as a primary role. The survey was developed collaboratively by a team of Gartner analysts, and was reviewed, tested and administered by Gartner's Research Data and Analytics team.

AI Development Strategies Survey 2017: This research was conducted via an online survey from 5 April through 21 April 2017 among Gartner Research Circle Members — a Gartner-managed panel composed of IT and business leaders. In total, 83 members completed the survey. Gartner Research Circle IT and IT-business members were invited to participate. The survey was developed collaboratively by a team of Gartner analysts, and was reviewed, tested and administered by Gartner's Primary Research team.

More on This Topic

This is part of an in-depth collection of research. See the collection:

- Deliver Artificial Intelligence Business Value: A Gartner Trend Insight Report

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