Top 10 Application Predictions Through 2025

By Saniye Alaybeyi, Senior Director Analyst
Gene Alvarez, Distinguished VP Analyst

12 May 2020

Gartner

Top 10 Application Predictions Through 2025

Published 12 May 2020 - ID G00721646 - 14 min read

By Analysts Saniye Alaybeyi, Gene Alvarez

Initiatives: Application Leaders

Gartner's annual application predictions show how we work, deliver and modernize an ever-widening range of business and IT initiatives. This retrospective roundup of predictions published in early 2020 supports application leaders with their vision and forward delivery plans.

Additional Perspectives

- Summary Translation + Localization: Top 10 Application Predictions Through 2025 (21 September2020)

Analysis

The future of applications provides organizations with nearly unlimited possibilities to create business value. Increasingly, applications have become a primary driver of business strategy. The potential for app-driven business strategies and products is greater than ever. It is a part of everything organizations do. Yet the ability to think in terms of applications is still difficult for many enterprises.

This transition to application-driven business requires IT leaders to elevate applications strategies, advancing a new vision of business problem solving.The future of applications profoundly impacts an applications organization's work and the competencies that an enterprise must build. It potentially changes the way application leaders work, deliver and modernize (see Table 1).

Gartner.

<p align="center" style="color:#d8551f">Table 1: How We Work, Deliver and Modernize Is Changing</p>

Current State	Future State
Project-Centric Application Releases	Continuous Product-Centric Delivery
Shadow IT	Business-IT Partnership
Integration: Defensive, Reactive	Integration: Intentional, Creative
Pay for Shelfware	Pay for Value
All Hand Coding	Low/Code, Robotic/ML Business Capabilities

Source: Gartner (May 2020)

As evidenced by its pervasiveness within Gartner's published 2020 research, applications are increasingly critical elements across nearly all industries, business functions and IT disciplines in both private and public sectors. Most significantly, applications are key to a successful digital business. This collection of top 10 applications-related strategic planning assumptions through 2025 summarizes predictions released in early 2020. Application leaders should include these in their planning for successful strategies.

Research Highlights

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

How We Work Will Change

Applications play a crucial role in enabling how we work and shaping employee experiences. Our 2020 predictions highlight new trends and technologies that application leaders should analyze as the way we work changes (see Figure 1).

Gartner

Figure 1: The Future of Work

The Future of Work
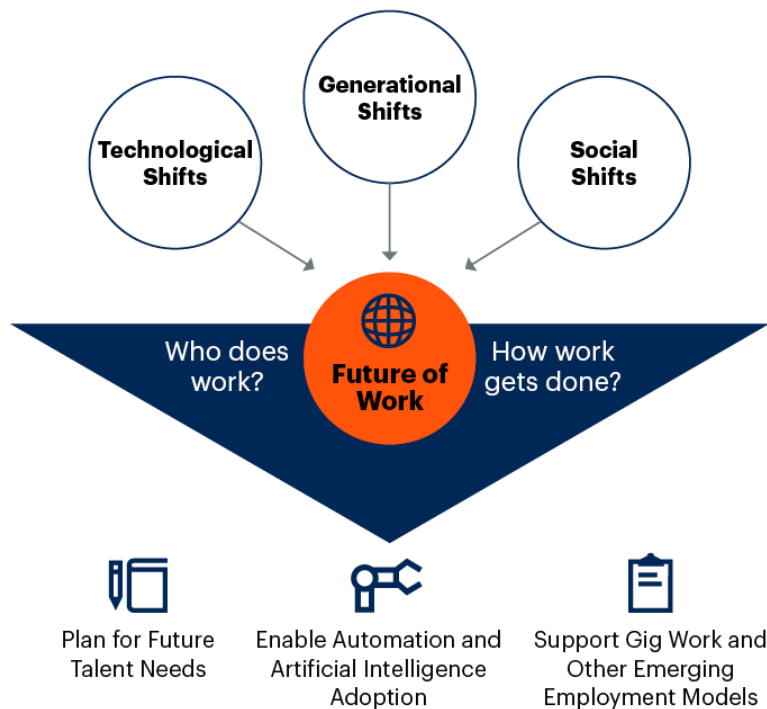
Source: Gartner

721646_C

Gartner

By 2024, in-person enterprise meetings will drop from 60% to 25%, driven by remote work and changing workforce demographics.

Now, more than ever, remote work support is top of mind for every IT leader. Many coronavirus contingency plans require remote work, regardless of whether organizations are ready. We're being forced into the world's largest work-from-home experiment and, so far, it hasn't been easy for a lot of organizations to implement.

Recommendations:

- Compare productivity before employees worked from home to work-at-home productivity during the COVID-19 to get a measure of the impact of remote working. This data can be used to determine if the organization should continue to use this work-from-home model after the recovery from COVID-19.

- Develop inclusive meeting practices by focusing on improving interpersonal engagement skills, especially in one-to-one management and team meetings. This will help ensure that there are fewer barriers as norms shift and workers move from in-person to virtual meetings.

- Monitor usage of current meeting spaces and formally survey workers about meeting preferences. Do they simply prefer to meet with remote tools? Or, would improvements to office meeting spaces enhance their experiences enough to draw them to the office?

- Invest in software, hardware and services for meeting solutions based on your strategy, culture, usage and projections — rather than upgrading as usual without further investigation.

By 2022, 50% of organizations will have business-IT collaboration teams driving technology-based business innovation.

The success in business innovation increasingly depends on continuous effective collaboration of business and technology innovators, bringing enterprise business units and central IT closer together, but most organizations are not prepared for joint business-IT innovation leadership.

Recommendations:

- Support business-IT partnerships by forming innovative organizational structures, including collaboration teams.

- Promote common teamwork by fostering cultural change in both business and IT organizations.

- Encourage shared business-IT deliverables by adjusting employee incentives in business units and IT departments.

- Form the foundation for a business-IT continuum for innovation practices by articulating a charter of cross-functional roles and responsibilities.

- Build collaborative practices by choosing development and composition tools that allow for joint business and IT participation.

- Upskill or train both IT and business leads with cross cutting concerns and topics.

- The vast expansion of remote work due to the COVID-19 pandemic creates an opportunity to combine business and IT team meetings on video and chat channels so they may work together more frequently.

By 2025, SaaS-based knowledge graphs will boost workforce digital dexterity by delivering personalized content recommendations, insight into work patterns, and individual skills development guidance.

Within an application, knowledge graphs will help accelerate workforce digital dexterity by providing personalized proactive delivery of relevant content, data and potential collaborators (see Note 1). They will be used to help assess the efficacy of applications at individual, team and organizational levels. Machine learning (ML) will drive continuous knowledge graph improvement.

Recommendations:

- Assign responsibility for knowledge graphs to an individual or team as a starting activity. This team should create a matrix that tracks the knowledge graphs that are accessible to the organization, the capabilities of these graphs and use cases.

- Pull graph reports to find meaningful data and explore aggregation of graph services across applications. Then, iteratively work with business units to determine where value can be delivered by graphs.

- Aggregate knowledge graph data with HR data (such as engagement levels and retention rates) and other important data (such as financial performance and customer experience) for continuous business improvement.

By 2023, 40% of professional workers will orchestrate their business application experiences and capabilities like they do their music streaming experience.

Business application experiences will be assembled to dynamically represent specific and changing business models and practices; a change from the traditional static one-for-all application experience.

Low-code tools, API-centric SaaS, APIs for integration and assembly, and product-style application delivery are all enabling people to tell applications how they want to work versus applications telling them how to work.

Recommendations:

- Reject any new monolithic solutions, sold or proposed in-house. Plan to renovate or replace the old ones and begin to move to assembled application experiences based on packaged business capabilities.

- Take an outside-in view of customer/employee needs by using design thinking to discover role-centric business practices and their required application experience.

- Accelerate a product-style delivery of application capabilities packaged as building blocks for application assembly using agile and DevOps techniques over traditional methods.

Related Research

"2020 Strategic Roadmap for the Future of Applications"

Future application experiences will be built from composable business capabilities that can quickly enable new business scenarios. Application leaders should use this roadmap to navigate from static application experiences to this new dynamic paradigm.

"Synchronizing Software Management Needs a Software Governance Strategy"

Many changes to software configurations in different buying centers and many interdependencies between software systems occur in the digital business organization. The central "command and control" IT organization for business software is dead — but application leaders must fight against anarchy.

"An Introduction to Graph Data Stores and Applicable Use Cases"

Graph data stores can efficiently model, explore and query data with complex interrelationships across data silos, but there is a lot of hype around them. This research provides technical professionals dealing with data and analytics an overview of graph database use cases and their architecture.

How We Deliver Will Change

Control over technology decisions has been a point of contention between the business and IT for years, spurred on by software as a service offerings and the rise of citizen developers. This power struggle is giving way to a new spirit of cooperation as organizations learn that digital business demands the joint participation of IT and the business (see Figure 2). Practices and technologies are emerging to support the new business-IT equilibrium. The challenge for application leaders is to identify those best suited to their organization's particular equilibrium and prepare for their arrival.

Figure 2: New Business-IT Equilibrium

New Business-IT Equilibrium
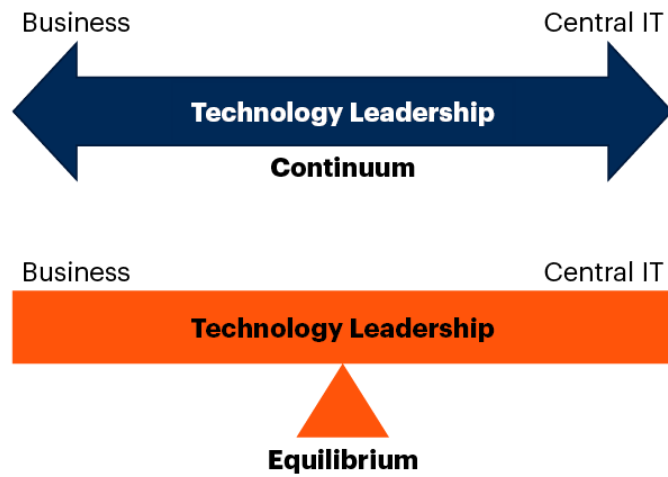
Source: Gartner

721646_C

Gartner

Through 2023, failure to change how work is funded will be the top barrier to implementing a product-centric delivery style.

Traditional project funding periodically applies a project portfolio management process to a mix of individual proposals. Under this approach, problems are often related to prioritization and spending; these include failing to reflect the firm's overall strategy and priorities, wasted resources and rewarding the loudest voices or those voices with the best political connections. Product funding, conversely, is conducted through a more continuous and business-driven process. The process is designed to align spending more closely with business priorities that are based on the business strategy. By its nature, product funding allows continuous adaptation to changing (market) conditions and priorities. This is especially important when organizations have to deal with high levels of uncertainty like during and after *the* COVID-19 pandemic.

Recommendations:

- Acclimate senior management to the new funding model by proving the concept in one or more pilots.

- Show delivered business value in frequent (bimonthly or quarterly) review sessions to ease senior leadership's concerns about pushing decision rights to the teams.

- Work with finance leaders to define a set of management dashboards that they — and other leaders — can use throughout the year to monitor spending and outcomes.

By 2024, low-code application development will be responsible for more than 65% of application development activity.

Low-code development describes the use of configuration, visual modeling, and simplified (reduced) scripting and programming language needs to deliver application functionality. Traditionally, the use of rapid application development techniques has been for departmental, low-usage and low-performance applications. However, the low-code platforms have evolved to support various combinations of reduced platform cost (subscription and operations costs), increased functionality around data and business logic, and reduced skills requirements. It further supports the level of citizen development, higher runtime performance (scalability, reduced latency), increased capabilities (workflows, processes, decisions, events, AI and mobile) and wider numbers of integrations to other corporate or cloud services.

Recommendations:

- Categorize application use cases to identify those appropriate for low-code development, then select the right low-code tools. Choose low code for the use cases that require faster time to market with reduced developer skill sets.

- Experiment with low-code development tools that are part of existing platform as a service (PaaS) and SaaS products, but don't try to force their consumption beyond their scope of capabilities.

- Supply citizen developers with low-code development tools that offer built-in guardrails, and ensure both IT and business stakeholders are granted the necessary visibility and oversight.

- Deploy low-code applications for external-facing apps on an opportunistic basis for business agility, but ensure the tools' licensing models align with ROI and business value expectations.

By 2022, one-third of enterprises will have deployed a multiexperience development platform to support mobile, web, conversational and augmented reality.

Through 2028, the user experience will undergo a significant shift in how users perceive the digital world and how they interact with it. Conversational platforms are changing the way in which people interact with the digital world. Virtual reality (VR), augmented reality (AR) and mixed reality (MR) are changing the way in which people perceive the digital world. This combined shift in both perception and interaction models leads to the future multisensory and multitouchpoint experience.

Recommendations:

- Break down any app development silos by standardizing back-end services and API development efforts while optimizing for multiexperience front-end development.

- Reevaluate your current mobile and web development strategies to encompass a multiexperience strategy for building fit-for-purpose apps.

- Accelerate app innovation by developing practices and policies that embrace and support the widest range of developer personas and skill sets possible, including citizen developers.

- Embrace continuous integration and delivery for multiexperience development by integrating the platform with common DevOps toolchains and governance for product life cycle management of apps and experiences.

Related Research

"Survey Analysis: IT Is Moving Quickly From Projects to Products"

A recent Gartner survey shows that the trend for managing application development and delivery work by moving from projects to products is accelerating. Application leaders trying to make the change need to anticipate the challenges they will face.

"Evolve From the Quarterly Business Review to Continuous Agile Governance"

Traditional methods of conducting quarterly business reviews do not work in a world of continuous agile governance. Application leaders must adjust their leadership approach in business reviews by favoring business value metrics over subjective information to ensure products deliver customer value.

"Low-Code Development Technologies Evaluation Guide"

Low-code application development is not new, but a confluence of digital disruptions has led to an influx of tools to meet rising demand. This research helps application leaders understand the various categories of low-code tools and markets, and how to select the most appropriate ones.

How We Modernize Will Change

Continuous application modernization is a gradual approach that focuses on providing digital business support and value in a timely manner. Continuous delivery requires continuous modernization (see Figure 3).

Figure 3: Continuous Modernization Enables Continuous Delivery

Continuous Modernization Enables Continuous Delivery
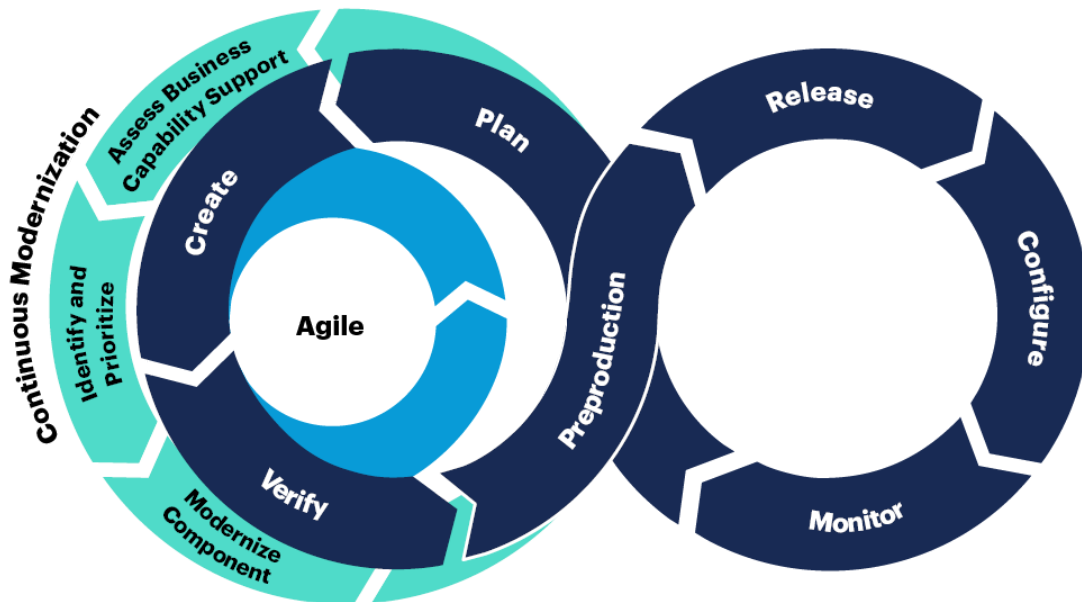
Source: Gartner

721646_C

Gartner

By 2022, one in five workers engaged in mostly nonroutine tasks will rely on AI to do their jobs.

Nonroutine work is growing faster than routine work in terms of number of workers and total wages. As a result, greater opportunity exists for improving the broadening base and higher value found in semiroutine and nonroutine tasks. AI applied to nonroutine work is more likely to assist humans than replace them.

In addition, combinations of humans and machines will perform in jobs more effectively than either human experts or AI-driven machines working alone will.

Gartner

Recommendations:

■ Apply AI-enabled human augmentation to increase the quality of cognitive tasks and decisions.

■ Develop organizational competency for identifying semiroutine and nonroutine tasks that could benefit from emerging AI capabilities.

■ Adopt a human-machine model first, looking for opportunities to improve efficiency over cutting costs or replacing staff.

■ Jump-start your AI initiatives by utilizing AI capabilities embedded within general-purpose software. Build or outsource when essential capabilities are unavailable in the "buy" option.

By 2022, the number of application development engineers building ML models using automated ML (autoML) services will increase from 1% to 25%, reducing the need for data scientists.

In a recent Gartner Research Circle Survey, 56% of respondents cited a lack of staff skills as being the No. 1 obstacle to the deployment of AI. Gartner observes that vendors are beginning to offer services that allow developers to submit a dataset that can be evaluated across multiple ML algorithms with automated model creation. Models generated using these services can now be deployed easily in the public cloud or in a container, and can be integrated into applications via an API call.

Recommendations:

■ Assess your developers and determine their interest in learning about and using ML models. Determine whether they have the data skills needed to create datasets that can be used to build ML models, or if you can upskill them or if they can work with third-party service providers to do this.

■ Launch pilot projects to evaluate autoML services and build some ML models that have the potential to enhance current applications.

■ Include ML models that perform well in future application build cycles and evaluate the benefits of adding ML models to the application.

By 2025, organizations will buy 40% of their enterprise business capabilities through aggregator platforms.

Soon, organizations will procure and subscribe to enterprise business capabilities and orchestrate their integration through nontraditional ERP vendors. Similar to downloading apps on mobile devices, organizations will adopt various technology platforms and deploy plug-and-play business functions. Over time, ERP has progressed from material requirements planning (MRP) to ERP, and now to enterprise business capabilities (EBC). EBC is an ERP suite surrounded by a platform that facilitates the rapid development and adoption of new applications and capabilities.

Recommendations:

- Develop and continuously update a business capability model among all lines of business, including those that belong to another industry.

- Explore and adopt a multicloud strategy to evolve your enterprise (both from an IT and an organization cultural perspective) to trust and expand the adoption of business services.

- Establish an agile application governance model to actively monitor product roadmaps.

- Aggressively adopt enhancements to improve business process and decommission customizations to simplify the application landscape.

Related Research

"Machine Learning Alters the Role of the Developer"

Application leaders should consider the impact of machine learning, and how it is changing the responsibilities of developers within their organization. Developers will increasingly manage portfolios of machine learning models that are incorporated into applications they are developing.

"Leading Upskilling Initiatives in Data Science and Machine Learning"

Despite tool enhancements and more data and analytics professionals, the talent gap is a top challenge for data science and machine learning initiatives. This is a high-level playbook to help data and analytics leaders develop in-house talent and improve data science and machine learning literacy.

"2020 Planning Guide for Application Platforms, Architecture and Integration"

Modernizing your application and integration architecture and delivery is necessary to support sustainable business agility. In 2020, application technical professionals responsible for platforms, architecture and integration must rationalize recent innovations to revitalize their app portfolios.

Note 1: SaaS Knowledge Graphs

SaaS knowledge graphs collect data about collaboration patterns, content creation and consumption, process execution and application usage patterns. The collected data meets all the criteria to be considered a very desirable, big dataset:

- High volume

- High variety of signals

- High velocity

- High value

Gartner

Those signals are assembled in a network of nodes and links (which form the graph), where they can be processed by a battery of analytical services including:

- Text analytics

- Question-and-answer extraction

- Anomaly detection

- Sentiment analysis

- Expertise identification

Recommended by the Authors

Strategic Roadmap for Becoming a Digital Product Delivery Organization

Hype Cycle for Application Architecture and Development, 2019

Digitopia 2035: All Stories Collected

Overcome Objections and Sell the Benefits of Moving From Projects to Products and Agile

The Role of Application Leaders in a Successful Agile Transformation

Survey Analysis: Enterprise Agile Frameworks Maximize Potential for Achieving Agility at Scale

In Application Rationalization, the Number of Applications Is Irrelevant

Application Modernization Should Be Business-Centric, Continuous and Multiplatform

Learn how Gartner can help you build an application strategy that delivers.

gartner.com/en/information-technology/role/applications-leaders

Become a Client

Get access to this level of insight all year long — plus contextualized support for your strategic priorities — by becoming a client.

gartner.com/en/become-a-client

U.S.: 1 800 213 4848

International: +44 (0) 3331 306 809

About Gartner

Gartner is the world's leading research and advisory company and a member of the S&P 500. We equip business leaders with indispensable insights, advice and tools to achieve their mission-critical priorities today and build the successful organizations of tomorrow.

Our unmatched combination of expert-led, practitioner-sourced and data-driven research steers clients toward the right decisions on the issues that matter most. We are a trusted advisor and an objective resource for more than 14,000 enterprises in more than 100 countries — across all major functions, in every industry and enterprise size.

To learn more about how we help decision makers fuel the future of business, visit **gartner.com.**

Gartner®