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Enterprise Automation: Three Transformative Themes

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WE BELIEVE AUTOMATION WILL RESHAPE THE FUTURE OF ENTERPRISE IN SEVERAL WAYS: BY BROADENING ITS REACH ACROSS THE WORKPLACE, introducing new ways of collaboration, and changing how data is stored and monetized.

Here, we explore the transformative impact of automation across each theme and assess the potential investment implications.

Bots and Low Code Broaden the Reach Of Automation

Recent advances in machine learning are driving the adoption of new technologies such as robotic process automation (RPA), which uses autonomous software programs (bots) to emulate and automate human actions. Today, bots can complete a wide range of repetitive tasks such as scanning paper invoices and processing accounts payable, and their capabilities continue to improve.

While many commentators have focused on the potential job losses resulting from the adoption of artificial intelligence (AI), we think AI-related automation is more about redefining roles and creating new opportunities as automation technology becomes more user-friendly. With bots becoming better at understanding the intent of human commands and easier to program with simple drag-and-drop steps, a broader range of workers can automate their processes without tying up already stretched information-technology (IT) resources. We believe this ability to program with little coding experience—so-called low code—will significantly expand the addressable market for software.

In the future, bots may redefine what we expect from software as they increasingly act as an interface between users and applications. For instance, instead of opening an application to perform a task, workers may go to their messaging app to instruct bots to complete the task. This new approach to application design can have a meaningful impact on the software industry.

Investment Implications

- RPA and low code — We believe the adoption of these technologies will generate growth opportunities for leading vendors and drive the emergence of new leaders in a fragmented competitive landscape.
- Potential for competitive differentiation — Making software easier to use and customize with bots and low code is emerging as a competitive differentiator among software companies.

Key Points

- Artificial intelligence is often blamed for job losses, but we think AI-related automation is more about redefining roles and creating new opportunities.
- After the pandemic, meetings and events will continue to have a parallel digital presence so automation will have a growing impact on how we communicate.
- From our perspective, the convergence of bots and low-code technologies offers a potential technological breakthrough.

- Democratization of enterprise automation — Companies that train their non-IT workers to take advantage of this new automation will likely develop an advantage over others that still rely on IT teams for technology implementation.

New Ways of Collaborating
The COVID-19 pandemic accelerated innovations in digital collaboration. With hybrid work as the new normal, we anticipate a lasting effect on how workers communicate and collaborate. Video and chat applications are getting smarter, and companies are experimenting with innovative technologies to replicate more of the office experience virtually. After the pandemic, more meetings and events will have a parallel digital presence. As more of our interactions are digitized and the capabilities of bots continue to improve, automation will have a growing impact on how we communicate.

Bots Become Active Participants
The use of AI in digital collaboration is in its early stages, and we believe that bots will become more active participants in daily work, with each interaction providing valuable training data to help them become more effective. Ultimately, workers may come to expect their passive presence to help facilitate information flow and deal with increasingly complex meeting schedules. Evolving social norms may make it acceptable for bots to attend meetings on participants' behalf enabling workers to be in several places at once.

Virtual Worlds in the Workplace
To understand how collaboration evolves beyond the next five years, we looked at how the next generation of workers collaborates in non-work settings now. We found an increasing variety of channels of communication, far beyond the usual combination of email, chat, and video calls. They include audio-only rooms, streaming, and virtual world building. In audio-only collaboration, workers can browse colleagues' real-time discussions and easily jump in and out, replicating some of the spontaneity and fluidity lost in video conference calls. The next generation is already interacting with friends in virtual metaverses and building virtual items together, much as low-code tools do for businesses, so we see these technologies as a natural fit for future workers. Because of the growing fragmentation of communication channels, we will more and more rely on automation tools to keep up with the flow of information.

Automation of Collaboration and Society
With modern knowledge workers spending so much time in meetings, AI-driven automation in collaboration technology may have a significant impact on productivity and work culture. In our view, thoughtful automation of communication will be critical to ensuring the new workplace is fair, inclusive, and productive.

Investment Implications
- A strategic role for collaboration platforms — We think that providers of collaboration software are in an important strategic position. They are likely to become gateways through which we

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Bots
Autonomous software applications that are programmed to carry out a set of tasks. Increasingly, these tasks involve emulating human actions such as vision and speech.

Metaverse
A collective digital space that makes use of virtual reality to create an immersive experience, blending online and offline reality.

interact with bots, and the high-quality collaboration data they hold will be valuable for training and developing bots.

- Bundling versus best of breed — We see opportunities for companies both looking to bundle multiple communication modes in one app and those specializing in one format such as video.

- New formats — Leadership in innovation may change rapidly, as new forms of communication emerge with the next generation of workers. We anticipate more acquisitions of future collaboration technologies by current leaders.

- Remote work beneficiaries — The pandemic has expanded our acceptance of remote work. We see a boost to labor-matching platforms that facilitate finding remote talent and companies serving the needs of that workforce.

Automation of Data Storage, Access, and Security
How we automate access and security of data will play a crucial part in the success of AI-led enterprise innovation. Data is scattered across a growing number of cloud applications, cyber threats are accelerating, and the number of access points is increasing. This coincides with a stronger focus on data governance, security, and privacy by regulators and society.

In response, we expect a shift to unified data platforms in the cloud that act as central knowledge repositories. The concept of pooling data has been around for a long time, but current database tools make it complex to govern access to data at scale. The next generation of databases are designed for the cloud and offer significantly better tools to automate authentication and access to data at a granular level for employees, bots, and third parties.

Blockchain and Data Exchange
Advances in blockchain technology may enable new business models of data monetization. Blockchain is not always an efficient way to store and process data, due to its emphasis on duplication and the need for consensus to process changes to the database. However, it has considerable potential in the governance of access and rights to the output of data analysis. For example, blockchain can track how data is used by a customer and share its economics with the database owner.

Investment Implications
- "Single source of truth" — As organizations look to consolidate fragmented data, it is worthwhile to monitor which software companies are emerging as central knowledge repositories for enterprise customers. We think only a handful have the potential to achieve this strategic position.

- Data exchanges — Advances in automation of data sharing could enable the emergence of secure marketplaces for data exchange. Companies will have new opportunities to securely monetize their data. The next generation database vendors are also well positioned to benefit from blockchain technology adoption.

> The most important technological breakthroughs often happen where several technologies intersect. From our perspective, the convergence of bots and low-code technologies offers such a breakthrough.

- Security management — The move of data to the cloud changes the security paradigm to a "zero-trust" approach. Instead of protecting a network's perimeter, this approach assumes hackers are inside and seeks to contain their damage and data theft. We see opportunities in security software companies aligned with this shift. Conversely, companies that fail to evolve their security architecture face, in our view, increasing regulatory and existential risks.

Convergence Creates Opportunity

The most important technological breakthroughs often happen where several technologies intersect. From our perspective, the convergence of bots and low-code technologies offers such a breakthrough, by making automation tools accessible to the wider workforce and facilitating the automation of a greater range of work processes. We expect automation to penetrate deeper into how we collaborate, with bots participating in the many channels through which we are likely to connect. Automation of data security and authentication may unlock more data for AI, and help solve the increasing challenges of cyber threats, privacy concerns, and regulation. We see opportunities for innovative newcomers, and for incumbents that can leverage these themes to increase their competitive advantage in a growing market.

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