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Implementing Generative AI at Large Enterprises

The Technology is Not Where Big Companies Struggle

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Abstract

Large enterprises can experience various challenges when implementing Generative AI (Gen AI) solutions across their functional lifecycles. The primary challenges are often more than the technical aspects of deploying a vendor-provided or in-house-developed Gen AI solution.

The primary complexity culprits are usually one or more of the following: (a) lack of explicit business models to drive new revenue streams for the company; (b) incomplete company North Star vision that defines their Gen AI success strategy; (c) poor executive alignment and incentive structures created to ensure successful and timely Gen AI implementations; (d) unrealistic delivery timelines imposed on Gen AI project implementations; (e) lack of well thought out business cases to measure Gen AI project impact, including cost efficiencies and margin improvements for the company (f) insufficient focus on end-to-end business process design; and, (g) inadequate internal team expertise in delivering large-scale digital business transformations for the company.

This case study will identify, generalize, and prioritize challenges with Gen AI and similar enterprise technology implementations. These insights are based on the authors' experience, over the past 25+ years, in designing, enabling, and scaling digital business transformations at Fortune 500 and other high-tech companies.

At Illumified AI, we are committed to helping companies identify and mitigate these transformational challenges. Most importantly, we are thought leaders in envisioning and incorporating new business models and technology solutions as enterprises search for new revenue streams and cost efficiencies resulting from their Gen AI deployments.

Background

Over the past 25+ years, we have worked on digital business transformations at leading Fortune 500 high-tech and other enterprises. Our roles include strategy, design, development, and implementation of new end-to-end business processes and complex IT technologies across multiple functional lifecycles and industry verticals. Our functional focus areas include marketing, operations, IT, manufacturing, supply chain, sales, support, managed services, etc. Our industry vertical expertise includes high-tech, automotive, pharma/healthcare, CPG, retail, oil & gas, and others.

Illumified AI's passion and expertise include enabling and accelerating our clients' journey toward finding new revenue streams and driving large-scale cost efficiencies.

Through this work, we have learned the importance of focusing on new business models as the primary effort in deploying enterprise solutions, including those trying to harness the power of Gen AI, and then aligning downstream efforts to support these business models and ensure their success.

Need for Business Model Innovation

Creating new business models for Gen AI is such an important step. We can look at examples of how highly successful high-tech companies were able to disrupt existing business models in their industry.

Michael Dell was able to envision and quickly scale what is called Dell's (now Dell Technologies) revolutionary "Direct Model." He disrupted the existing Build-to-Stock (BTS) business model used by all his competitors, including HP and Lenovo. Within the BTS business model, hardware companies would build high volumes of PCs and ship them to retailers, hoping that those products, models, and configurations were what consumers and businesses wanted to buy.

With its Direct Model, Dell would not build a PC or server until it first received an online customer order, and that customer paid for that order upfront. This eliminated the need for Dell to hold vast amounts of inventory in finished goods and materials on its balance sheet. This business model not only drove much higher revenues and sales margins but also produced the industry's lowest cost of manufacturing and supply chain globally.[1] This shift in business model, along with the required changes in end-to-end business processes and corresponding new IT systems architecture, has enabled Dell to maintain its lead in PC and server sales for over 30 years.

VMware recently completed another successful business model transformation. Since its founding, VMware has sold its enterprise IT virtualization software based on a Perpetual Licensing business model. This meant that customers had to make a sizeable upfront capital expense (CAPEX) outlay to use VMware software and solutions in perpetuity (with incremental payments for software support each year). As their technology financing needs changed, customers preferred to pay VMware based on their actual consumption levels of the VMware software stack – enabling them to transition to a more predictable operating expense (OPEX) and make payments on a scheduled (typically monthly) basis.

VMware decided to implement this by rolling out a new SaaS & Subscription (SnS) business model, where customers purchased, installed, and started using their enterprise software and were charged based on monthly usage by consumption tiers. This change allowed VMware to meet customer demand for a new financing model while streamlining VMware's operational costs and revenue streams across the year and avoiding having to manage irregular customer purchases and contract renewals. These changes required new financial processes and technological transformations to enable each of their software products and solutions to be sold as a subscription, to be able to meter their

usage, and to bill customers simply and adequately. This successful end-to-end business transformation allows VMware to quickly grow its new and existing customer base and rapidly increase its new annual recurring revenue (ARR) streams.[2]

On a similar note, as Gen AI evolves and scales, there will be many opportunities for innovation around Gen AI-specific business models, as well as adapting compatible legacy models to include Gen AI. Many companies will likely be forced to "break" their incompatible legacy business models and rebuild them to pursue Gen AI business opportunities and grow their companies. This is a common refrain, as many large companies are in the middle of their own business model transformations, most looking to understand how to leverage AI to develop new revenue streams. Some AI companies are pursuing SnS usage-based models to provide their Gen AI solutions to customers. Market analysts and investors want to see how newly developed ARR streams can be deployed within Gen AI solutions.

As we have learned, companies should identify and enable new business models as the primary step in their enterprise transformation journey. This must be part of the business envisioning and strategy phase and, importantly, should be completed before any business processes and IT architectures are designed and developed. Many companies grab an existing solution (including Gen AI) and start implementing it without understanding how it will align with and (hopefully) improve one or more of their functional areas.

Companies must exercise patience to get this step correct and ensure that the entire leadership team provides feedback and is aligned with the new business model or Models. Returning to this step becomes increasingly difficult (sometimes impossible) after new business processes have been designed and new AI technologies are being developed and implemented.

This is critical during Gen AI implementations, where companies are looking for various approaches to establish new revenue streams based on leveraging advances in AI technologies and platforms.

Company Vision, Alignment & Communication

Many companies are under pressure from their boards and CEOs to define a new company vision, business strategy, and product roadmap that incorporates Gen AI. One high-tech company addressed this challenge by their CEO publicly announcing AI inclusion in their networking and infrastructure products will become a reality in their upcoming product offerings. While this proclamation is essential from an executive visioneering and market competition standpoint, the challenges of aligning their internal business functions to execute on this public statement are not primarily due to the technical implementation of AI, but instead the result of internal adoption friction.

After evaluating the development, integration, and support overhead required from the in-house development of AI features into their product base, they decided to outsource AI capabilities to leverage external AI expertise and impose cost-of-solution and service predictability that negotiated AI vendor pricing and MSAs make possible.

This has proven to be a complex effort on many levels. There has been a shifting internal vision of how AI should be incorporated into the company's product offerings, resulting in a prolonged vendor selection and contract negotiation process. In addition, the existing revenue targets and compensation structures for sales and product group executives were not modified to encourage aggressive commercial rollout timelines and enthusiastic sales team promotion of these AI-enhanced products.

Therefore, internally, there is a dawning realization that a new, end-to-end business model re-engineering initiative must be undertaken to transition the company from its legacy offer development and sales model to a new model that incorporates the costs and benefits of AI.

This is a prime example of how companies should not assume that AI implementations can be seamlessly incorporated into existing business models. Instead, they should start by defining their business model transformation roadmap, with special attention to where AI fits within and supplements that transformation.

Short AI Deployment Timelines

Many CEOs and senior executives are setting unrealistic Gen AI business goals and IT implementation timelines, both internally with their employees and externally with market analysts, customer prospects, and investors. These goals are often set externally first, and internal teams must then scramble to try to meet them. It is imperative that internal teams identify the business value, define their strategic approach, create the implementation plan, and set delivery timelines.

Most executives do not factor in (or even appreciate) the business process design and execution part of any Gen AI initiative. There is further complexity in making the Gen AI work within the company’s existing IT architecture. In addition, there are usually considerable gaps in the availability and accuracy of sufficient data sources, including public and private Large Language Models (LLMs), which are required by Gen AI solutions.

It is common that target timelines set by executives are out of sync with the estimates provided by delivery teams. When this is the case, an MVP (minimum viable product) approach should be taken in which the core solution capabilities required to capture an acceptable ROI are prioritized and aligned with budget and deployment timelines. For example, launching one or more MVP projects focused on applying Gen AI to automate critical processes in specific functional areas can reduce delivery timelines and validate business model viability. However, the real business value comes from follow-on implementations of the comprehensive Gen AI platform, which helps to transform and scale to the size of the entire business.

Missing Business Case & Success Criteria

Many Gen AI and other technology programs are not governed by, or even include, a well-thought-out business case to measure the initiative's success. The proper business case can be an excellent tool for motivating executives and their teams to align and work across functions. It should become the critical governance measure for evaluating the effectiveness of the design and deployment of Gen AI-based point solutions or broader Gen AI platforms.

The business case must identify and quantify a single, overarching delivery metric to help the company focus its efforts and further align its Gen AI program with the company's overall performance.

Our first business case example is for a Fortune 500 high-tech fulfillment and delivery company using an end-to-end “order friction” metric to visualize and measure the impacts that AI programs have on their existing processes, IT systems, and customer experience. This overarching metric can measure the effectiveness of each of their business processes (e.g., pack, ship, transport, and deliver) where customer orders could get stuck. These issues could be affected by low inventory levels, supply chain issues, order management mistakes, shipping errors, and delivery delays, which AI-based solutions could monitor and help alleviate.

To resolve these issues, AI projects could give the company broader visibility across its entire value chain by accessing additional internal and external IT systems and understanding its complex data structures. This integration would allow the AI to make analytical choices to predict delays before they occur and prevent customer experience degradation. AI could be used to manage large volumes of transactions “by exception” and resolve these issues without the need for manual intervention.

Regarding generated business value and ROI impact, we have seen order friction rates quickly reduced by over 50%. These value chain integration implementations can produce technology ROIs of 5 to 10x (or more) in 12 to 24 months.

Our second business case example is for a high-tech support contact center company using Gen AI-powered support bots to create and distribute technical support content. There are several key success measures for a contact center, including first-time issue resolution rates, support cycle times, and overall support costs. However, the most critical metric for every company is its customer experience as measured by its Net Promoter Score (NPS).

When deployed properly, Gen AI support bots can significantly increase support contact resolution rates while reducing cycle times and support costs. These resolution rates must be closely monitored and measured against real-time

customer experience metrics to ensure that Gen AI support bots are performing as designed.

Regarding business value generated and subsequent ROI impact, there are opportunities to significantly increase contact deflection rates away from expensive live agent phone and chat support interactions. The goal of each contact support center is to move more of their customer contacts to cheaper, touch-free channels. Previously, this relied heavily on providing a highly effective knowledge base (KB) search experience on their website. Today, automated support chatbots can process that content, blend it with other technical content they find (including external KB content), and use it to understand better and answer customer queries.

If implemented successfully, contact rates in less expensive Gen AI chat channels will increase, support cycle times will decrease, and customer experience will be significantly improved. Some support contact centers may be able to improve their NPS by as much as 5 to 10 points by fully incorporating and integrating Gen AI into their existing tech support business processes and IT systems. Gen AI program ROIs will vary and depend on each company's process and technology implementation costs, as well as Gen AI platform usage fees, compared with the actual reduction in customer support costs they produce.

Our third business case example is using Gen AI-powered automation to create and maximize the effectiveness of channel sales marketing content (marcom). This usually involves marketing teams from separate companies working together to build co-branded marketing materials to maximize their product sales.

One success metric that could greatly benefit from Gen AI-powered improvements is the cycle time reduction involved in the production and approval of this co-branded marcom, which is typically displayed on the company's websites or across its advertising channels.

The current cycle time may be weeks as one partner marketing team writes their own creative text and produces their product image or video. Similar delays can occur as the second partner marketing team produces their creatives. These marketing teams must then work closely together to create a "blended" marketing message and corresponding image or video to co-sell the product. This

marcom must go through extensive review and approval cycles to ensure that it meets the brand standards of each company. Finally, that piece of co-branded marcom is distributed to their website or advertising channels with the goal of measuring and maximizing visitors' engagement levels with that content.

Gen AI-powered improvements could help automate some of these marcom workflows and reduce their cycle times. Gen AI could identify existing marcom images and creative text on the web previously deployed by partner marketing teams. It could also find similarly targeted product content from its competitors. Gen AI would ideally gauge user engagement with marcom on each website and allow partner marketing teams to use this data to improve their content.

The Gen AI solution could automatically "blend" this marcom content (e.g., text, images, videos, etc.) and deliver it to partner marketing teams. When marketing teams are comfortable with and can trust this new more automated creation process (which will take time) then newly AI created and blended marcom content could skip much of the review and approval cycles.

As far as generated business value and ROI impact, marketing teams could reduce marcom creation and approval cycle times by up to 30%, which brings down their marketing costs. In addition, customer engagement resulting from Gen AI-optimized marcom should be significantly improved if the Gen AI platform is tuned to identify the most highly engaging marcom. Gen AI program ROIs will vary and depend on each company's process and technology implementation costs as well as their Gen AI platform usage fees, compared with marketing cost reductions, improvements in user engagement, and increases in product sales.

Lack of "End-to-End" Business Process Design

Gen AI implementations require rethinking existing processes and designing new end-to-end business processes to harness the power and capture the value of Gen AI. The overarching goal is to enable amazing customer and partner experiences (while reducing company costs), which are critical to every company's success. However, many companies do not take the time to adequately document their end-to-end business processes, increasing the probability that they will encounter major functional issues as they implement Gen AI solutions.

These functional issues can be exacerbated by (1) feeding AI engines with inadequate LLM source data, (2) immaturity / rapid evolution of competing Gen AI platforms, (3) the risk of business impacts stemming from undesired AI output, and (4) making a long-term development and investment commitment to a Gen AI platform that might not be the market leader in 6 months.

For example, the authors evaluated two functional areas (technical support and partner marketing) where Gen AI can have positive and potentially negative impacts. One functional area where Gen AI shines today is providing technical support and customer care. Gen AI support chatbots can provide the same experience (or potentially better) as a live support agent at a potentially lower operations cost.

Technical support resolution rates can also be improved by having real-time access to highly accurate internal issue resolution source data. When Gen AI support bots have access to this data, they can quickly summarize large volumes of up-to-date technical support information for a specific product or solution. This allows rapid analysis and dissemination of knowledge base articles to customers and partners via online channels to prevent more expensive support channel contacts.

Another customer support improvement opportunity lies in Gen AI gathering relevant KB technical articles produced by external sources. Gen AI can then be used to effectively “blend” external content with internal KBs to quickly create comprehensive technical solutions and share those solutions with customers during support bot interactions. Ideally, the Gen AI support platform would fully automate and autonomously deliver this process.

The challenge lies in incorporating these Gen AI capabilities into a company's contact centers' existing business processes and workflows. Unless up-to-date contact incident data and existing KB article content are correctly incorporated into the LLM design and implementation, the quality of the resolution content output by the Gen AI bot will be degraded. The desired speed of customer support interactions demands that these Gen AI responses are highly accurate and very timely. This is needed to ensure that the customer support experience is world-class and that support incidents can be resolved in “one contact” without live agent intervention. To ensure that support agent intervention is minimized,

support organizations must first trust that Gen AI-created technical solutions meet the same level of resolution quality that a support agent would deliver and at a much lower support cost.

In addition, if Gen AI responses do not meet this threshold, they will quickly degrade support interactions and reduce employee and customer confidence in chat solutions. This would assuredly harm the company's NPS.

Due to potentially damaging customer experience risks associated with deploying fully autonomous Gen AI support systems, the authors believe that in tech support, for the foreseeable future, one or more manual oversight steps will be needed to measure Gen AI KB output quality, fine-tune AI to increase resolution rates and access impact to customer satisfaction.

The second functional area that the authors evaluated is channel sales marketing and its related content creation, approval, and distribution processes. These processes involve both product manufacturers/solution providers (brands) and their channel sales partners (partners). The authors have found that partners often have limited marketing budgets and are eager to leverage Gen AI to produce their marketing collateral and alleviate their creative output constraints. Conversely, brands typically have extensive marketing budgets and can produce high volumes of quality marketing collateral. Instead, they would like to leverage Gen AI to streamline the overall cost of their content creation, approval workflows, and content distribution.

This produces opportunities for Gen AI market research solutions to identify and measure customer engagement on previously deployed marcom images, videos, and text. It could also identify marketing content and measure the engagement of competitors' marcom and products. Then, the Gen AI could define the content creation parameters it predicts will maximize customer engagement and sales based on the marcom it produces.

Furthermore, Gen AI could efficiently "blend" both brand and partner marcom and then automate the necessary approval cycles to ensure brand standards are met for each company. Once completed, the approved piece of co-branded marcom can be distributed by the AI to websites and advertising channels to maximize customer engagement and sales related to that marcom.

However, most companies are not building their own Gen AI systems from the ground up. As such, they are outsourcing the development of Gen AI capabilities they require to 3rd-party Gen AI vendors. This limits a company's ability to tune the content output based on the constraints of the vendor's platform.

As an example, ChatGPT provides parameters to select content output creativity/randomness (temperature) and range of content output probability (top_p) to ostensibly define the guardrails of "acceptable" Gen AI output. However, since the Gen AI vendor did not build these parameters around a company's specific business goals, internal processes, and functional constraints, there is a high likelihood that Gen AI output will, at some point, deviate from the company's objectives.

Since Gen AI is not a conscious organism with the intuitive ability to understand what fulfills business expectations and corporate guidelines, this element of random content output can result, at the minimum, as minor deviation from the intended business outcomes, and, at worst, as complete fabrications of reality. Essentially, there is a ghost in the machine that is not entirely under the company's control. Companies are discovering that today's Gen AI marketing platforms are not out-of-the-box sales and channel marketing solutions.

In summary, Gen AI is an excellent tool for automating significant portions of customer support processes as well as marcom research/creation/approval/distribution processes. However, Gen AI is not yet a fully autonomous replacement for these functions. For Gen AI solutions to be fully trusted by employees and customers, companies would be wise to factor these Gen AI limitations into the designs of their new business processes.

Limited Enterprise Transformation Delivery Expertise

Many large companies do not have a successful track record of managing their own digital business transformations, especially around Gen AI-based technologies. The authors have seen that success is greatly improved when a company has a strong, experienced internal team focused on delivering enterprise transformation, commonly known as the digital business transformation (DBT) team. The DBT team must bring together experts from each functional area in the

company, such as sales, marketing, product groups, IT, operations, logistics, finance, legal, support, etc.

This team must have clear executive ownership, individual functional roles defined, and a charter to develop the company's "North Star" vision. This North Star vision and strategy should be established by the DBT team and communicated to leadership across the company. It must set the company's 5+ year strategy and clearly articulate how Gen AI will be used to fulfill its North Star vision. This vision must be approved and supported by a cross-functional executive team and have sufficient budget allocated to ensure the success of the North Star business transformation.

The DBT team will be responsible for creating a company strategy, executive alignment, business model innovation, business case development, change management, and program status communication. The team will also own driving the end-to-end process design and IT systems architecture required to fulfill this design. Once completed, the DBT team will articulate the Gen AI deployment plan, its development phases, and estimated delivery timelines for all stakeholders. Finally, the DBT team should be responsible for driving these implementations to completion, with a typical Gen AI technology and business process implementation consisting of one or more pilots, multiple deployment phases, extensive solution testing, market launch, and business case validation.

Post-launch, the digital business transformation team must closely monitor the effectiveness and scaling of its new business models and be able to pivot to address gaps, challenges, and new business opportunities quickly.

Conclusion

In this case study, we have identified challenges and discussed lessons learned from implementing Gen AI solutions and digital business transformations at Fortune 500 and other high-tech companies.

We have highlighted what we strongly believe is the most critical aspect of a successful Gen AI solution implementation: the evaluation, design, pilot, deployment, and scaling of new business models. This will enable companies to generate new revenue streams and drive large-scale cost efficiencies from deploying Gen AI solutions.

Senior executives must be careful to set realistic Gen AI program expectations, success goals, and implementation timelines, both internally and externally. A cohesive Gen AI North Star vision and strategy must be agreed upon and locked with executives and employees. This must be paired with newly established incentive structures and allocated budgets to ensure business and customer success.

Organizations must ensure they adequately document current and future-state business processes and then fully commit to re-engineering them across the enterprise based on their North Star goals and objectives. Gen AI output inconsistencies must be addressed, and companies should not assume that Gen AI solutions will be fully autonomous. Therefore, many functions will likely still require some manual validations within the newly re-engineered process. Failure to do so will result in functional issues impacting customer and partner experiences which may result in lower NPS for the company.

Furthermore, a well-thought-out business case can help companies quantify and measure cost efficiencies and margin improvements from their Gen AI implementations. This will provide valuable feedback and highlight opportunities to pivot approaches and solutions to maximize the power that Gen AI can have on their business.

Many companies the authors have worked with do not have an internal team with the necessary skillsets to deliver end-to-end digital business transformations. Stand-up of a focused DBT team is very important to understand how Gen AI solutions could be envisioned, developed, and deployed across the company’s functional areas. This team must understand detailed existing business processes and IT architecture complexities as well as current and future business challenges. An experienced digital business transformation team is critical in selecting and implementing the right Gen AI solution in such a new technology space.

This case study has highlighted challenges and provided solutions to increase the success rates of Gen AI implementations. While there certainly are complexities specific to Gen AI technologies, the primary challenges companies will encounter are typical of other digital business transformation initiatives at high-tech companies.

At Illumified AI, we are committed to helping companies identify Gen AI opportunities, build effective digital business transformation teams, integrate Gen AI capabilities into existing IT architectures, implement those solutions across functional areas, and quickly generate impressive program ROIs. These business benefits can stem from new sales, margin improvements, large-scale cost efficiencies, and customer experience improvements.

Our deep strategic expertise in envisioning, developing, and implementing revolutionary new business models allows companies to capture and scale new revenue streams. For example, a company could transform its legacy business model into a “Gen AI-powered” SnS business model with ARR.

Notes

1. Dell, Michael. Direct from Dell. HarperCollins.
2. VMware external presentation. Leading Transformation in a Rapidly Changing World. VMware IT Performance Annual Report 2023.

About the Author

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Tom Wala is an author whose biographical and institutional details were not provided in the materials available for this publication. Publicly available information supplied for editorial review indicated only limited professional metadata, precluding a precise summary of current role, affiliation, and publication record. As a result, his specific research interests and methodological specializations cannot be reliably characterized here without risking misrepresentation. In the context of JBAI’s scope, he is presented as a contributing voice to scholarly and practitioner-facing conversations at the interface of business and emerging digital technologies. The journal welcomes future updates to his author profile to accurately reflect appointments, research themes, and validated achievements.

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