

# **Strategic Foresight for Transformative Customer Engagement in the Medical Technology Sector**

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## Executive Summary

The future may be unpredictable, but strategic foresight can help us envision it more clearly. With this as our motivation, we developed potential future scenarios that will enable BD to anticipate changes, recognize new opportunities in customer engagement within the medical technology sector, and be ahead of the curve in a rapidly evolving global landscape. Our proposed scenarios are designed to challenge conventional operational and thinking patterns, offering fresh competitive perspectives and fostering an environment for change.

Our collaboration with BD began with the following framing question: “How will the nature of customer engagements in the medical technology industry evolve in the next five years, given the rapid development of new technologies, including Artificial Intelligence (AI)?” Our goal was to shed light on future consumer attitudes towards automated medical equipment, the burgeoning educational AR/VR market, the integration of Generation Z into the workforce, and the expansion of the generative AI market. We initiated our project with a fringe sketch ([Exhibit 1](#)) involving our teams, where we identified various signals from news and data sources, categorizing them into eleven distinct Sources of Disruption. Using the CIPHER framework, we categorized many signals that led us to identify trends. Those trends and uncertainties led us to develop our Axes of Uncertainty ([Exhibit 2](#)) to ideate potential ripple effects when combined and ultimately inform our scenarios. This collaborative effort culminates in two scenarios we are excited to share with the BD team.

## Identified Trends

Trends are notable shifts towards a particular future and underpin the scenarios we've developed. Through our discussions, we've identified some particularly relevant trends to BD, which we enumerate below.



### **Trend #1: Integration of Advanced Technologies (AI, AR/VR and IoT)**

AI, AR/VR, and the Internet of Things (IoT) are woven into the fabric of various industries. In the healthcare industry, AI-enabled precision medicine and real-time health monitoring have the potential to revolutionize patient care. Across industries, AR/VR and IoT are creating immersive and personalized shopping experiences. Marketing strategies are becoming more refined and practical, driven by AI's deep consumer insights. This trend signifies a transformative shift towards a more interconnected, data-centric world, with technology underpinning and dramatically enhancing user experiences and operational efficiencies. It represents a pivotal movement in the evolution of the business landscape, where adaptability and innovation become the keystones for success in an increasingly digital world.

### **Trend #2: Digital Transformation and Patient-Centric Care**

The coronavirus pandemic necessitated innovations in the delivery of healthcare, in particular, creating a need for healthcare to be delivered in the home. As a result, at-home medical tests and virtual doctor visits are now everyday realities. Simultaneously, wearables are increasing in popularity, providing a wealth of insight into health metrics and monitoring capabilities to individuals without the need for a doctor to deliver them. This increased digitization means healthcare is not only something received in a doctor's office but is also beginning to resemble a service delivered to individuals, with the potential to improve outcomes and change the nature and delivery of patient care. This trend is further amplified by the entry of new players to the at-home healthcare services.

### **Trend #3: Policy, Privacy, and Market Dynamics in Healthcare**

The regulatory and political landscape has a significant impact on the healthcare industry as a whole. Privacy has been a particularly salient concern as both HIPAA (Health Insurance Portability and Accountability Act) and GDPR (General Data Protection Regulation) have imposed regulations on how consumer data is stored and managed. The intersection between these two regulations, and their evolution in the



future, will become even more relevant as large tech companies (e.g., Amazon, Apple) continue to expand their foothold in the healthcare space through wearable technology and acquisitions of healthcare providers and pharmacies. While future developments in the regulatory space are uncertain, privacy-related regulations will undoubtedly play a significant role in how well any player in the healthcare industry is able to harness their data to revolutionize their services.

#### **Trend #4: Consumer-Centric Healthcare Models**

Driven by the growing influence of social media, there's a shift toward a more informed and engaged patient base as consumers increasingly seek healthcare services that are quick, reliable, and readily accessible through digital channels. It reflects a fundamental transformation within the healthcare industry, where providers are challenged to align with the preferences and expectations of an empowered and tech-savvy consumer base. This narrative pushes healthcare organizations to invest in digital health solutions, patient education, transforming products to fit personal use, and engagement strategies that cater to the demands of an increasingly consumer-centric healthcare ecosystem, ensuring that patients continue to receive the healthcare experiences they seek.

#### **Plausible Scenarios**

Our scenarios reflect a world where AI, IoT, and AR/VR technologies have become ubiquitous and focus on two areas of particular relevance for BD: the potential of Generative AI to revolutionize the sales force and the evolution of AR/VR technologies into a mainstream medium of education. These scenarios could coexist in the future and represent critical areas where BD's investment might help the company stay ahead of the curve over the next 5-10 years.

#### **Scenario #1: The Tech-First Revolution in Medical Device Sales**

In the not-too-distant future, the landscape of medical device sales will undergo a radical transformation. The emergence of readily available Generative AI technology



and a shift in demographics within the business world will significantly alter customer preferences, especially in sales and marketing. For BD, a company specializing in medical devices, this change presents both a challenge and an opportunity.

The story unfolds in an era where corporations, including BD, have to adopt a "low-cost" strategy to remain competitive. Automation is no longer a luxury but a necessity. Generative AI, now more affordable and accessible, has become a cornerstone of business operations. The mature Internet of Things (IoT) technology has recently made its mark in the medical device sales industry, paving the way for a world where IoT and Generative AI are integral to business development and marketing.

BD's marketing strategy evolves into a technology-first approach, driven at each stage by data. The company leverages its IoT-enabled devices and Generative AI data to enhance its sales and marketing tactics. The business strategy shifts to being tech-first, low-cost, and data-driven. This change was primarily driven by the advancement of technology and changing demographics, where the decision-makers in purchasing now preferred varied levels of interaction, from face-to-face meetings to a simple click on a digital platform.

In this new era, BD forms strategic partnerships with tech giants like Microsoft, Verizon, AT&T, and Cisco. Their customer base also evolves, now including a new generation of purchasers and CTOs of health organizations. BD's latest ventures include developing and integrating Generative AI and IoT technologies.

However, this new strategy is not without its risks. The primary threat includes the inability to match the prices offered by competitors and the continuous need to evolve with technological trends in a highly regulated industry. Furthermore, the increasing involvement of big tech companies in healthcare poses a significant challenge to BD's position in the market.

Despite these challenges, BD finds its footing by adopting a tech-first approach to marketing and sales. The company reorganizes its sales philosophy, reducing the emphasis on personal interactions but enhancing efficiency and customization to meet customer preferences. Their new GenAI tool, "HealthHub AI," is designed to refill orders and interact with customers, serving as a virtual sales representative and a valuable companion to human sales representatives.



In this future scenario, BD establishes itself as a leading technology center in healthcare. This ambition, however, comes with challenges, primarily because the healthcare industry often resists rapid change. Despite this, BD's utilization of Generative AI transforms how customers interact with the brand, streamlining processes and introducing a more technology-focused approach to customer service.

Customers and consumers relate to BD's brand, appreciating the company's ability to harness technological advancements for better efficiency and personalized service. BD's first-mover advantage in integrating Generative AI into its sales and marketing strategies is not just a leap into the future but a strategic move to stay ahead in a rapidly changing world.

## **Scenario #2 Healthcare Training Completely Revisited Through the Use of Immersive Technology**

In a visionary move, BD transforms healthcare training into an immersive journey through augmented reality (AR) and virtual reality (VR). Picture a realm where learning is not just about acquiring skills but a dynamic experience seamlessly interwoven with upsell opportunities and loyalty programs. This cutting-edge approach, especially appealing to tech-savvy Gen Z, positions BD as the pioneer in leveraging AR/VR to build trust with healthcare workers. Imagine a world where every performance evaluation opens doors to additional tools and education, creating a holistic environment sponsored by BD. Here, education takes the lead as the primary sales channel, forging a deep connection between healthcare professionals and BD products, fostering loyalty, and setting a precedent for innovation in the industry.

In this envisioned future of 2030, the healthcare landscape undergoes a transformative shift driven by technological advancements, demographic changes, and evolving societal values. AR/VR becomes a ubiquitous tool, particularly in the healthcare sector, where professionals from the tech-savvy Generation Z are now dominant. Recognizing this shift, BD, the medical device company, strategically embraces AR/VR training as a replacement for traditional methods. The seamless integration of AR/VR into healthcare education not only aligns with the preferences of



digital natives but also caters to a workforce seeking continuous professional development.

Adopting AR/VR technologies in BD's operations brings significant enhancements, particularly in data collection and analysis. This approach allows BD to gather crucial real-time insights about how users interact with their devices. Firstly, this data enables the optimization of training materials, allowing BD to refine their educational content and uncover new device applications, thus broadening their functionality. Secondly, the sales team uses these insights to identify market gaps, providing timely solutions that enhance customer satisfaction and sales efficiency. Lastly, this wealth of data can be used to develop a sophisticated recommendation system. This improves the user experience by suggesting relevant products and opens a new marketing channel for BD, enabling more targeted and effective product promotions.

This shift towards AR/VR is underpinned by a broader technological trend where healthcare institutions fully embrace digital transformation. Artificial intelligence, big data, and the Internet of Things have become commonplace, facilitating data-driven decision-making and personalized patient care. Concurrently, the socio-economic landscape supports this change, with a stable global economy enabling substantial investments in advanced training methods for healthcare professionals. The cultural perception of healthcare has evolved, with an increased emphasis on continuous education and skill development, creating a market where BD's focus on education as a primary sales channel is accepted and welcomed.

In this future scenario, BD's commitment to AR/VR training aligns with the technological zeitgeist and broader environmental and regulatory considerations. The company's proactive approach to sustainability and reducing the carbon footprint, coupled with compliance with evolving regulatory standards, positions it as a responsible industry leader. Overall, the envisioned future sees BD at the forefront of healthcare education, leveraging AR/VR to enhance training, drive sales through education, and establish lasting connections with healthcare professionals in an ever-evolving industry landscape.



## Strategic Recommendations

Our analysis points to a vastly different marketing landscape for BD, brought about by the continued evolution of technology, particularly Generative AI and IoT. In this world, corporations that leverage technology most efficiently will likely enjoy significant cost advantages and be able to grow their positions in the industry. It is, therefore, critical that BD invest in transforming its marketing and sales operation to be technology-first and evolve its internal processes and capabilities to be a leader in the space. Based on the scenarios captured in this paper, our strategic recommendations are:

- Leverage simple automation and IoT to streamline the reordering process.
- Explore opportunities to leverage Gen AI to transform the sales force.
- Integrate AR/VR into education processes and leverage the data on customer behavior to continually improve BD's products and operations across verticals.

### **Leverage automation and IoT-enabled devices to streamline the reordering process**

Many of BD's sales orders are repeat purchases from healthcare organizations that order in mass quantities. Given their repetitive nature, these orders are currently handled by salespeople manually and are prime candidates for automation. BD can leverage data on how frequently customers buy, what they purchase, and when they buy to build out basic automations via Robotic Process Automation (RPA) bots that automatically reach out to customers whose stock is running low. A subscribe-and-save model could also be integrated to allow customers to automatically ship replenishments when their stock is low. The technology for achieving this is mature and well-understood; as a result, we believe this recommendation is immediately actionable and could significantly impact the efficiency of BD's sales force by freeing them up to spend time prospecting new clients and providing education. In a world where IoT-enabled devices are ubiquitous, BD's smart cabinets could contribute to a new iteration of streamlining reordering. These cabinets could detect when items are running low and automatically prompt customers to reorder with an easy click. The need for a





sales person to be involved in the transaction all but disappears. As a result, investing in automating these processes will then allow the sales team to focus on high-value add activities such as acquiring new customers.

## **Empower the Sales Force with a Generative AI Sales Assistant**

Generative AI has massive potential to empower BD's sales force to be more efficient and effective at all stages of the sales process. In the prospecting and pre-onboarding phases, a Generative AI sales assistant could largely streamline the process by helping salespeople understand their prospective clients and create tailored and compelling pitches. As salespeople are asked questions on the fly, a Generative AI assistant could also help field questions and provide valuable answers. Once clients have been onboarded and throughout the lifetime of the relationship, the AI assistant can continue to help sales reps answer questions and tailor communications and strategies to the needs and preferences of their clients, as well as the individual making purchasing decisions.

In addition to providing tailored sales assistance, Generative AI-based chatbots, using principles like RAG (retrieval augmented generation)<sup>1</sup>, could be deployed to provide real-time customer support and order fulfillment capabilities. These bots could provide advice on frequently asked questions and repeat order fulfillment, augmenting the advantages of the automated reordering processes discussed above.

BD has several opportunities to integrate Generative AI into their sales and customer support processes. As such, we recommend that BD begin exploring opportunities to integrate Generative AI into the sales process and identify some low-investment, high-value use cases, such as auto-drafting tailored communications, to incorporate into their sales force. Throughout development, it's important to bring the sales force along. They live their processes daily and are in the best position to identify inefficiencies and pain points. Building solutions that address those opportunities first would likely help build trust in the technology and an appetite for more among the sales force. Investing

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<sup>1</sup> RAG is a framework in which AI retrieves its knowledge from a set "book" of available information, instead of the entire body of its training data

(<https://research.ibm.com/blog/retrieval-augmented-generation-RAG>)



in training and initiatives to familiarize the sales teams with Generative AI as solutions are being developed will likely also help them adopt these new technologies for the long haul.

### **Invest in a comprehensive AR/VR education environment**

Based on our analysis, we believe AR/VR as a tool for education has enormous potential to be a competitive advantage for BD. This technology presents the opportunity for BD to reach future clients early (e.g., while they're still in medical school) and cement themselves as a preferred brand. It also allows BD to provide impactful and tailored education to their partners, particularly by gathering data on how users use their products and giving feedback on potential misuse or modifications. Additionally, these training modules, distributed via software and technology, can provide BD with incredibly valuable data and help inform further product development. For example, if a module on how to properly use a syringe flags most people using them at the wrong angle or overfilling them, BD could use that data to develop more error-proof syringes. Finally, this mode of education also presents a new channel for customer reach, allowing BD to suggest products and give customers a chance to try those products, leveraging data to tailor the relevance and eventual effectiveness of those recommendations. Given that this technology has not fully reached maturity or widespread affordability, we recommend that BD start investing in R&D around a couple of focused educational use cases and bring their partners along to develop useful and valuable solutions.

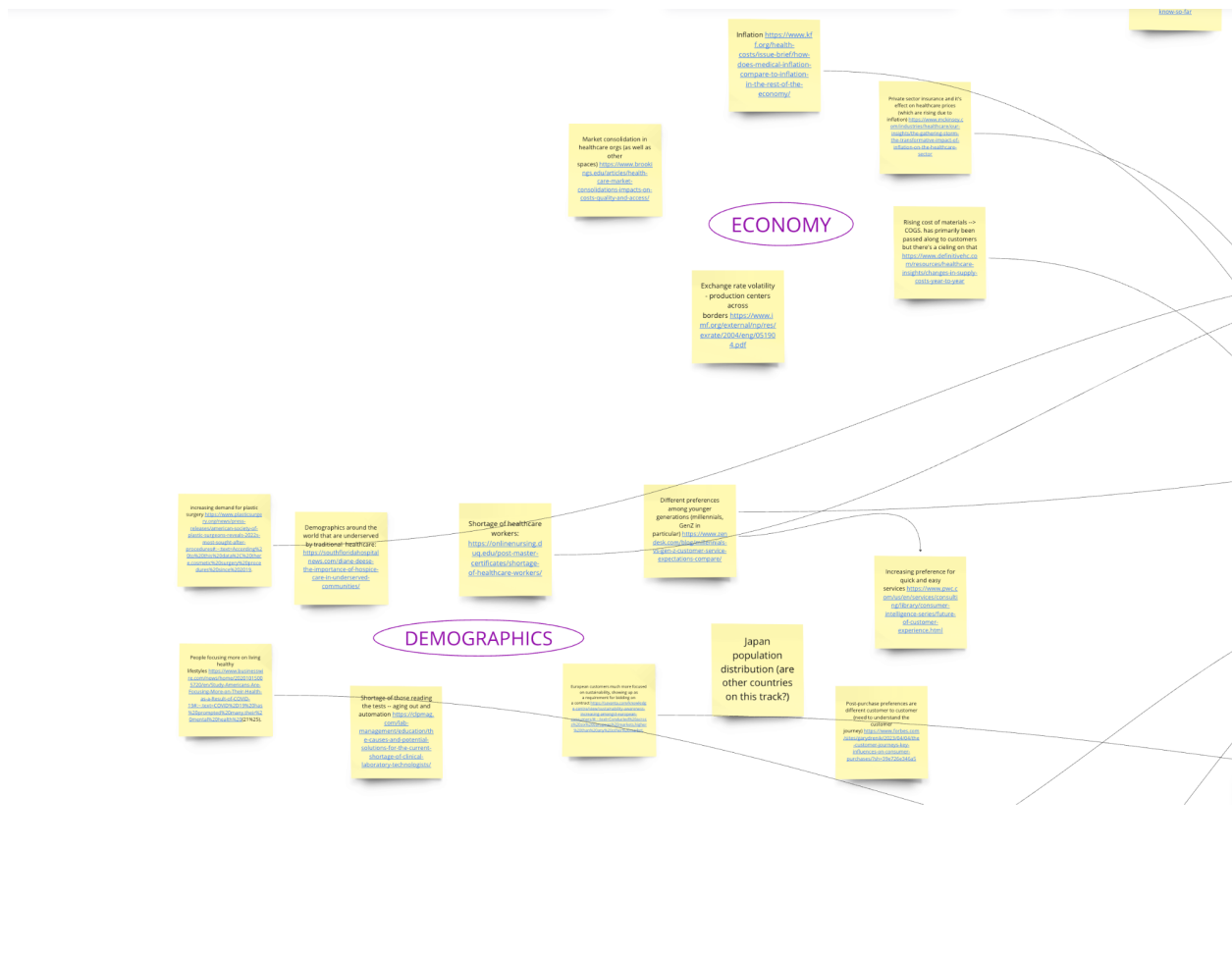
### **Conclusion**

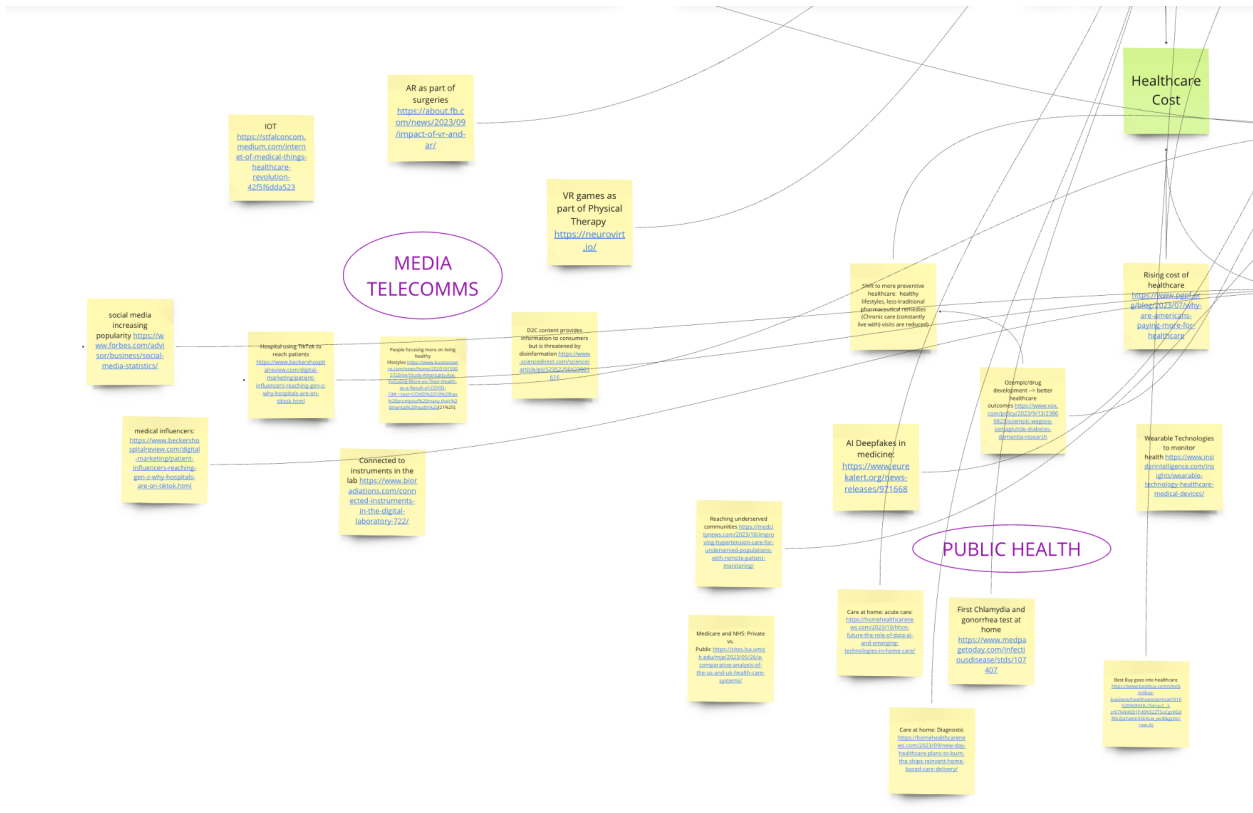
The last five years have been characterized by immense change, including the rapid development of new technologies, most recently, Generative AI. The technology industry exhibits no signs of slowing the pace of innovation and evolution. Through our work, we've imagined a likely future where Generative AI, AR/VR, and IoT become widely available and used by individuals and businesses. These technologies have the potential to disrupt when, where, and how medical devices are marketed and sold. Our

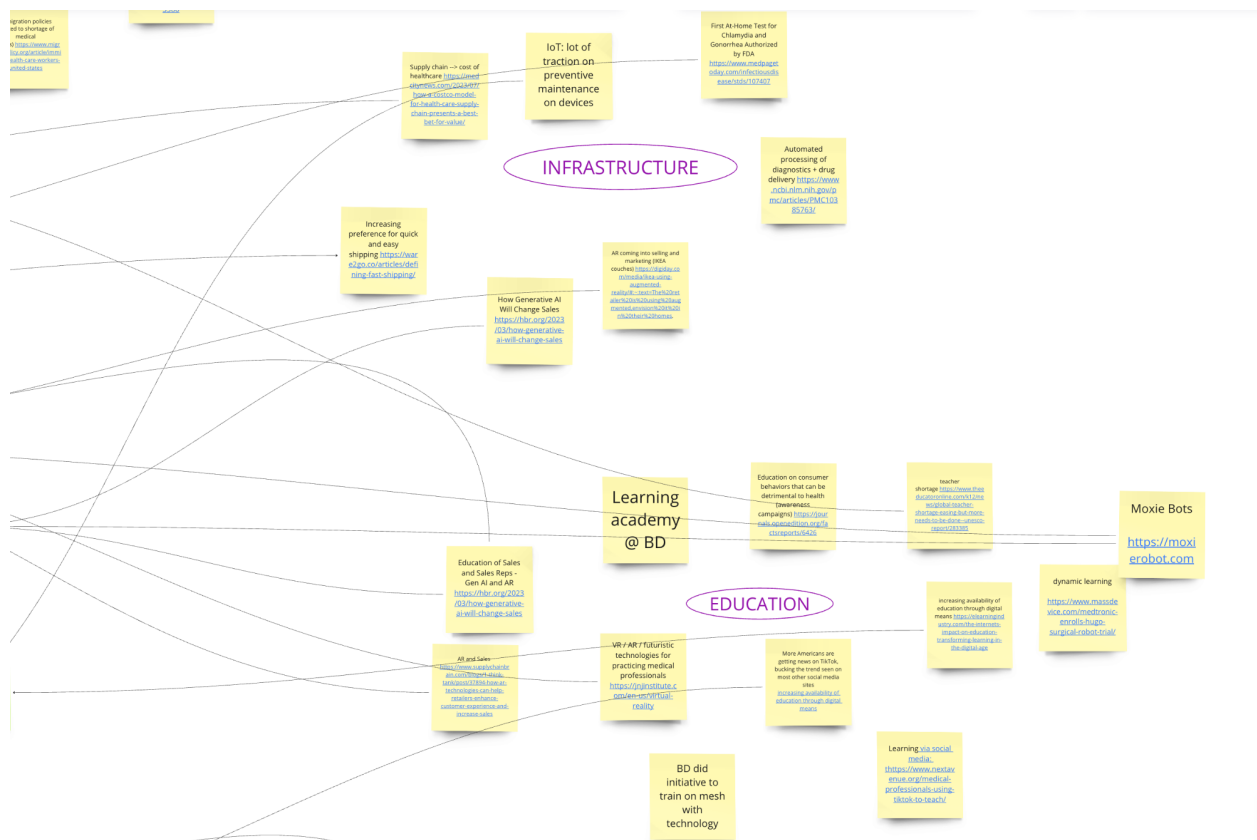
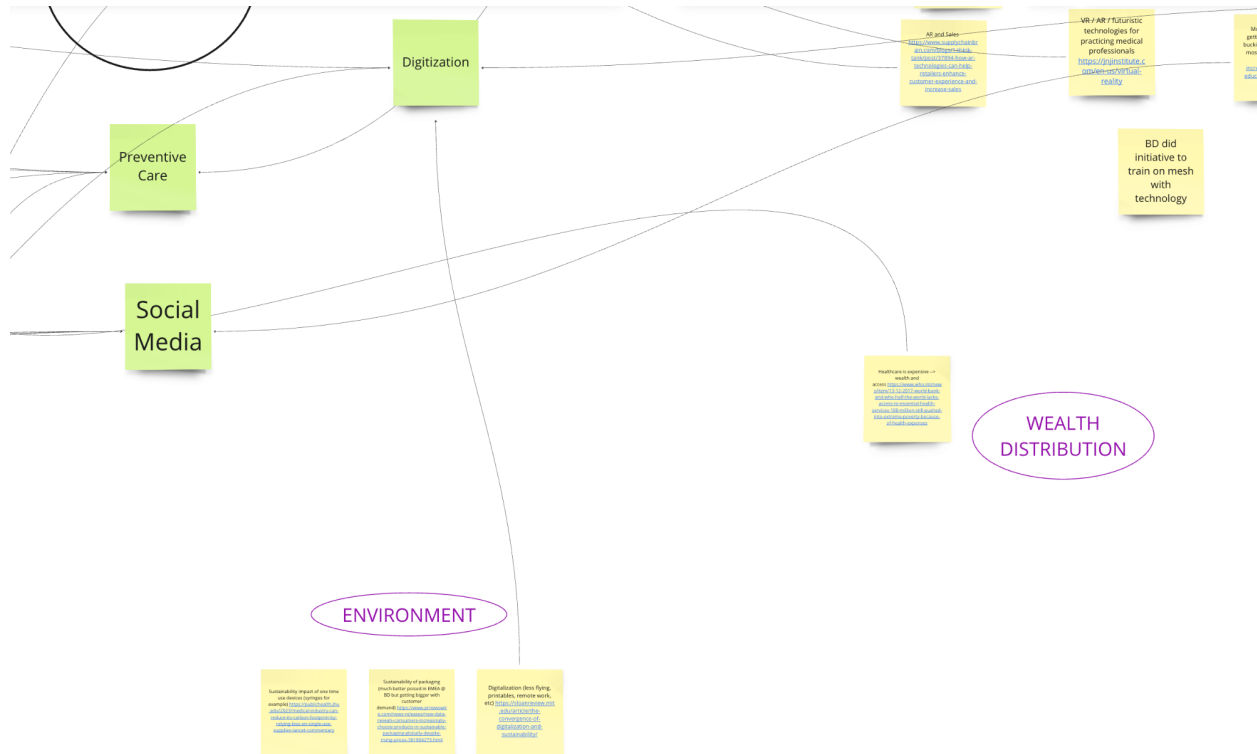


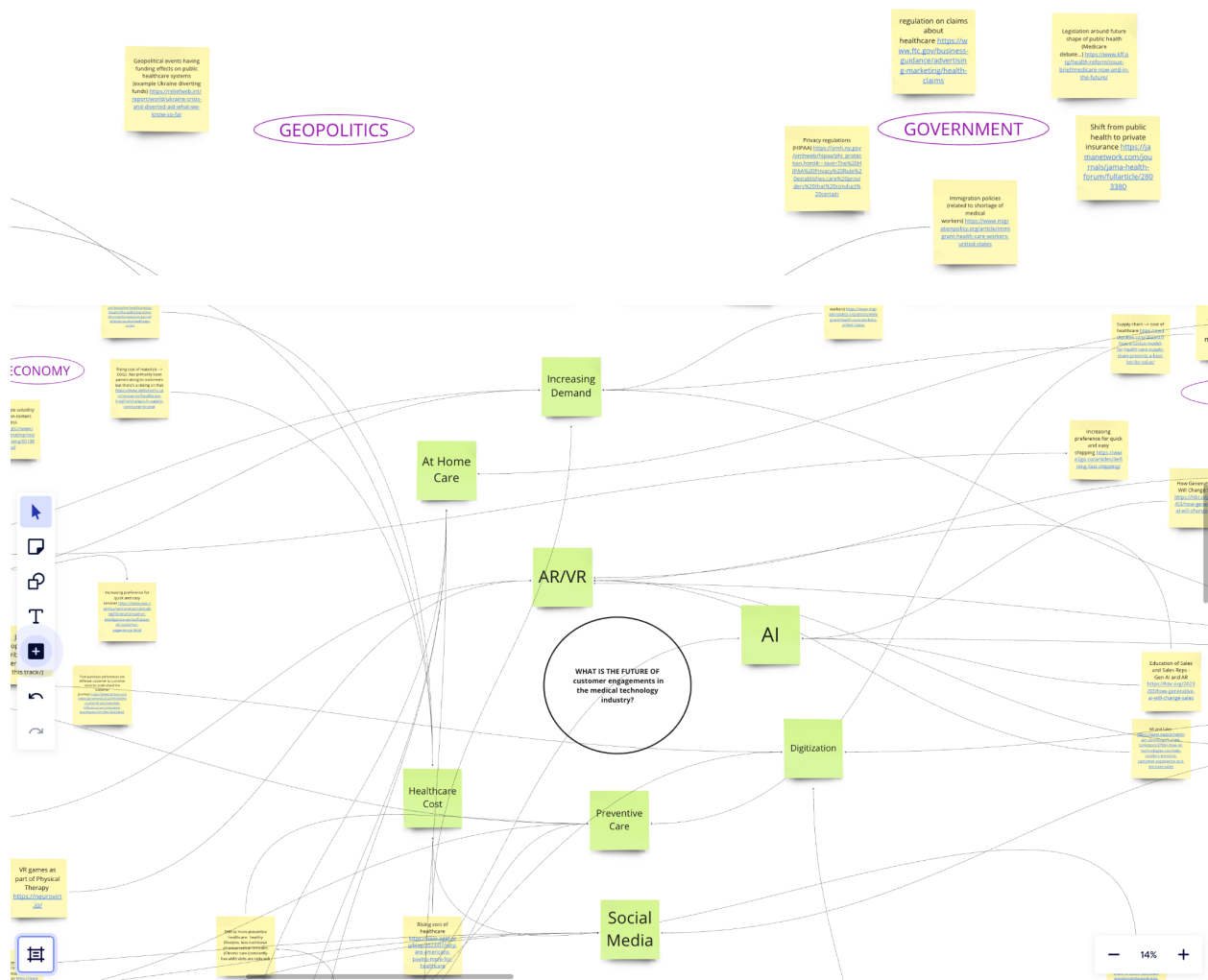
work has highlighted two scenarios where BD can invest early and be a trailblazer in its industry by adopting these technologies across its sales force and education initiatives. We believe that by at least considering what the evolution of these technologies means for the future of its business and operations, BD can devise and deploy strategies that give it a lasting competitive advantage relative to its peers.

## Exhibit 1: Fringe Sketch



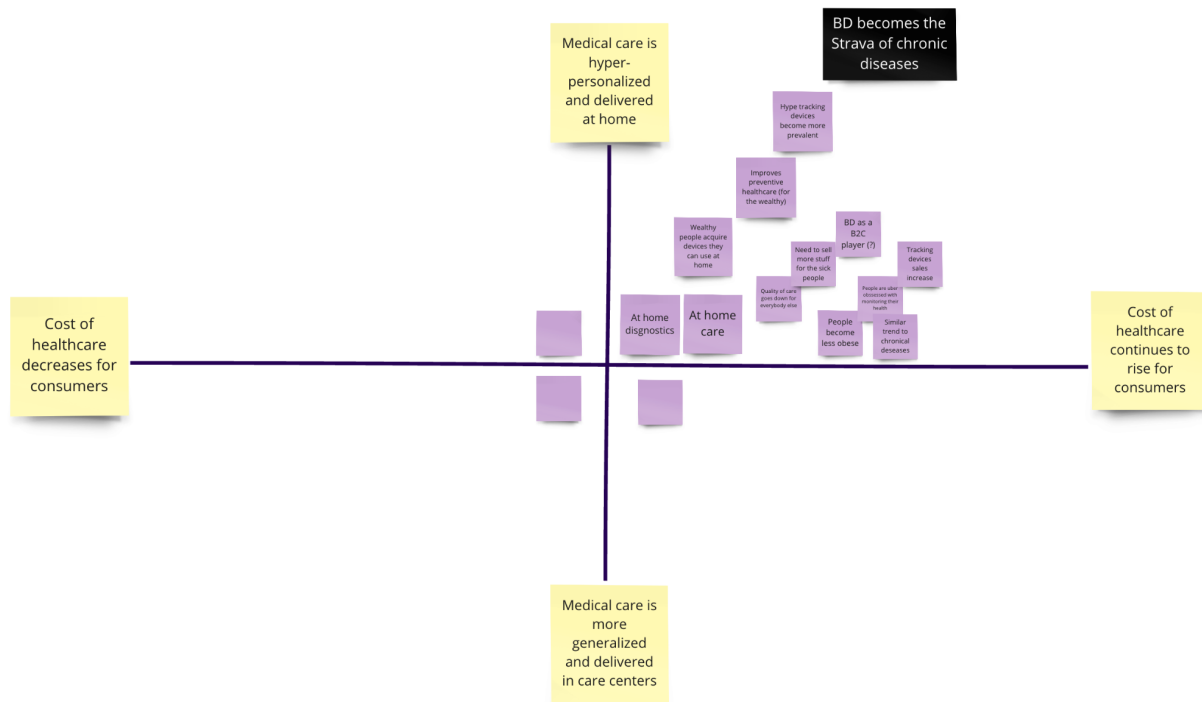












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