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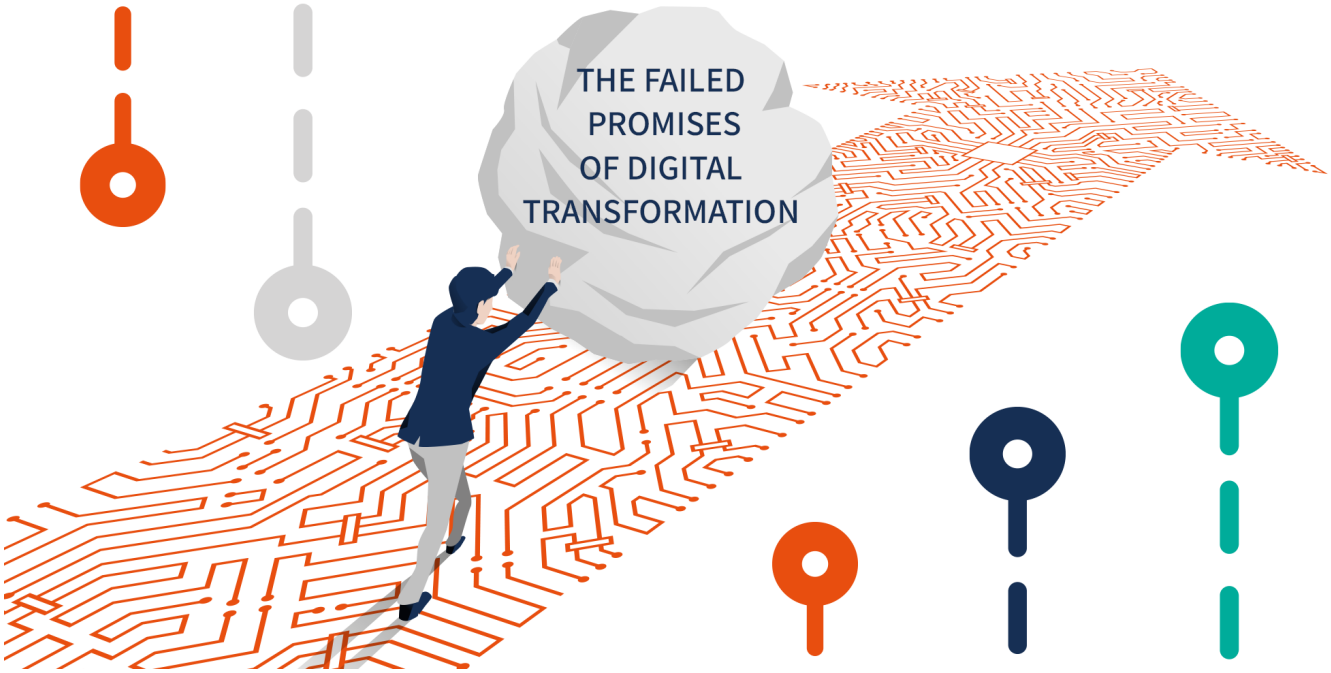

Let’s be frank. Digital Transformation, which has been a top priority for CEOs and boards of directors for many years, has had mixed results. While they have generally succeeded in achieving certain key objectives, many other outcomes have fallen far short of expectations. Management consultants regularly point to many of the root causes, but they often overlook a glaring common thread. These failures are at least partly due to the absence of *graph technologies,* at the center of those transformations, allowing companies to “connect the dots” across their data to drive optimal outcomes.

As graph data platforms become more widely understood, they play a key enabling role in delivering on many of the failed promises of Digital Transformation. But until C-level executives wrap their minds around graph technologies, and get serious about taking a more strategic approach with them, they will continue to struggle delivering on the promised outcomes of Digital Transformation. More critically, they will continue to struggle becoming more data-driven within their organizations, missing out on value opportunities.

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What Are Graph Technologies And Why Should C-level Executives Care?

Graph technologies have nothing to do with charts and visualizations and everything to do with mathematical graph theory. It's all about connections and relationships in data. Traditionally, data are stored in rows and columns and tables, like spreadsheets. Aggregating data, sorting, and filtering are a cinch. But if we want to get more context around the relationships and interconnections in these data, traditional technologies have severe limitations.

Graph technologies refer to a different way of storing and analyzing data that enables answering questions from data that were previously impossible. To create a graph, we store the data as a network of things connected to other things by relationships and then do all kinds of interesting queries, analytics, and data science that we couldn't do before. This applies to potentially hundreds of use cases where semantic knowledge graphs sit at the center, from enterprise search, digital twins of assets, processes, or systems, complete views of customers, products, or supply chains, dealing with cyber threats, fraud detection, dynamic pricing, predictive maintenance, and so much more. The use cases span all the things near and dear to most C-level executives' hearts – driving more revenue, improving operational efficiency, reducing risk, or increasing innovation and agility. If context and relationships between things are important, then graph technologies should be at the center of the solution.

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The Innovation Driver

Graph technologies have been a key driver of innovation for many years. And even industry disruption. Companies like Google crushed their competition when they began using a graph algorithm called PageRank (developed by co-founder Larry Page) that enabled them to derive the importance of a website by the relationships it had with other websites. Their results were simply far better than the competition, which led to complete dominance of internet search. Similar scenarios have played out in other industries, like logistics, social media,

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retail, travel, telecommunications, life sciences, manufacturing, and others, though often they choose not to disclose their secret sauce.

> Gartner® claims that “by 2025, graph technologies will be used in 80% of data and analytics innovations, up from 10% in 2021, facilitating rapid decision making across the enterprise.” (See “Market Guide for Graph Database Management Systems”, Published 30 August 2022, by Merv Adrian and Afraz Jaffri).

Graph-based approaches are the “foundation of modern data and analytics,” and a key enabler of many of the current and past data and analytics trends they publish each year. It’s the foundational technology that connects the dots across the data, enabling us to do all those other things we want to be able to do to drive insight.

However, it seems clear that very few companies are deploying graphs strategically across their organizations. It has typically been deployed one use case at a time as teams discover that a graph-based approach can solve a particular problem they’re facing. They find a case study or white paper that leads them to explore a graph-centric solution. But it’s hit or miss. So while most Fortune 500 companies are using graph technologies somewhere in their organization, very few do so strategically. Leaving this to chance is both slow and costly.

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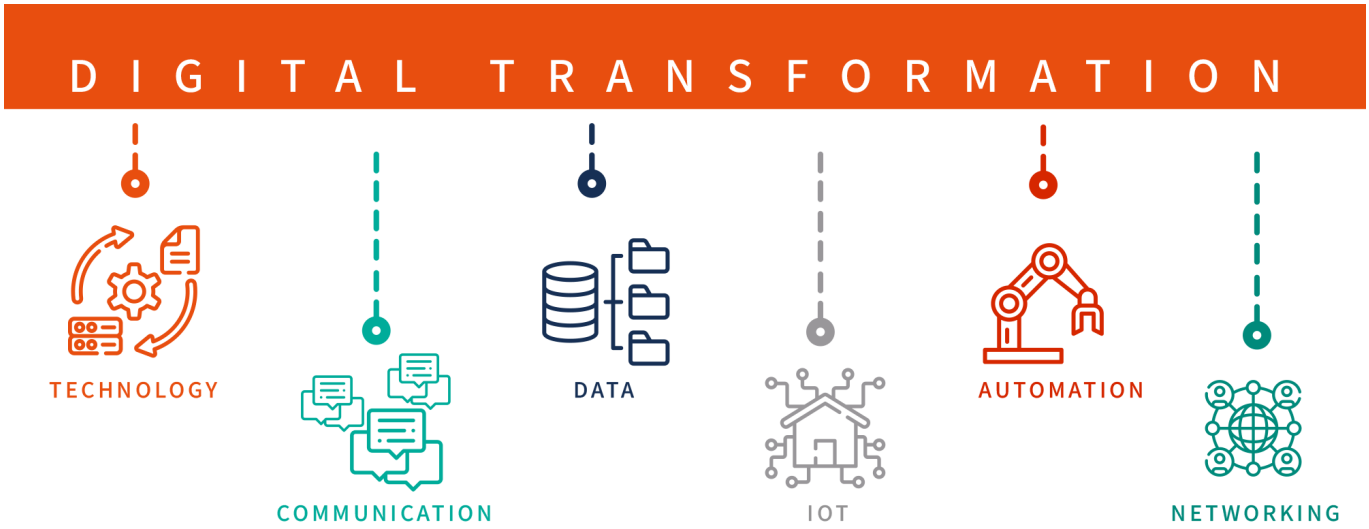

Without graph technologies at the center of digital transformation, companies can't "connect the dots" across their data.

The Cost of Staying the Course

Consider the opportunity costs of this slow case-by-case graph deployment approach – the missed revenue, efficiency, and data-driven decision-making, or the reduced risk and agility. What key innovations were overlooked? By deploying one use case at a time there are no economies of scale, teams learn by trial and error, and suffer from a lack of best practices being learned and shared across the teams. And, to make matters worse, the competition may make that shift to a strategic approach, leveraging all the benefits to capture market share while your organization struggles to keep up.

Management consultants have only recently begun taking notice of graph technologies given the attention that Gartner, Forrester, and other analysts have been paying to the graph space in the last few years. But they have generally failed to realize the strategic importance or build any real capability around graphs. It remains at a tactical rather than strategic level in their offerings and consulting.

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Wrapping It Up

Organizations that want to take a more strategic approach to graph technologies should consider forming a Graph Center of Excellence. The primary function of the Graph Center of Excellence would be to ensure the organization strategically deploys graph to maximum impact. It would include educating key stakeholders across the organization on the graph value proposition and industry use cases, identifying and prioritizing those use cases based on the vision and key initiatives of the organization, creating a centralized graph foundation to serve multiple use cases with economies of scale, building POCs and MVPs, and supplementing project teams with graph experts to ensure best practices are utilized. A framework for creating a Graph Center of Excellence will be published in the coming weeks.

Enterprises that move quickly to make graph technologies strategic across the organization will gain many of the unfulfilled benefits from their Digital Transformation efforts and better position themselves for greater innovation and data-driven decision-making. The failure to do so could result in becoming the next Blockbuster or Kodak.

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will gain many of the unfulfilled benefits from their Digital Transformation efforts. Share on X

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