DESIGNED ANALYTICS

2024

Designed Analytics Report

Top 5 Focus Areas

Data & Analytics

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Introduction

Late December and early January are the “prime time” for trend reports. Trends are useful but do not mean anything unless we know how to prepare to address those trends. For example, the trend may indicate that GenAI will impact businesses but companies are struggling to implement vanilla ML projects. And if those same organizations implement a GenAI project, it will never sustain.

While it is good to understand the trending areas, the only true lever of success is building fundamentals. This report is, therefore, not about trends. It is easier to cobble together a list of technologies. Every trend report has almost the same list. I intend to present a list of focus areas that companies should explore in 2024 to leverage the trending data and analytics technologies successfully. And I promise you no BS, sales pitches or jargon marketing.

Just honest suggestions beyond all the hype!

Kumar singh

Kumar Singh

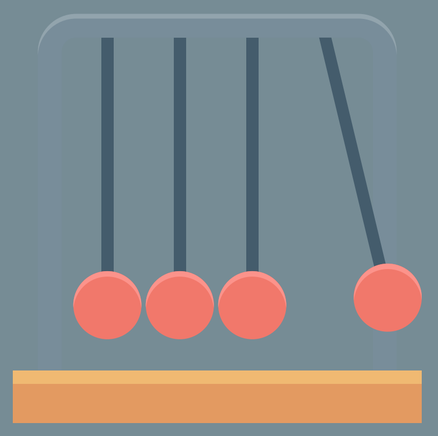
Designed Analytics LLC

Executive Summary

My profile picture in the introduction section is AI generated. I think my "real-life" profile pictures do more justice but I included that picture for a reason.

I was impressed that the app was able to learn from a very limited dataset of ten pictures. AI tools like GenAI are exciting, mesmerizing and when leveraged prudently, indeed have the capability to transform an organization in ways we could not have imagined a decade ago. But most organizations will not be able to leverage these advanced tools for their benefit !

Pick any Fortune 500 company and collect statistics on how many times, in last two decades, they have paid an external vendor to perform an established inventory analytics approach of inventory optimization. If they share data honestly, you will realize that the same analysis has been performed multiple times. Leading organizations in the world, top of their class, have not been able to build sustainable capability for a very well established analytics method, forget AI-enabled capabilities.



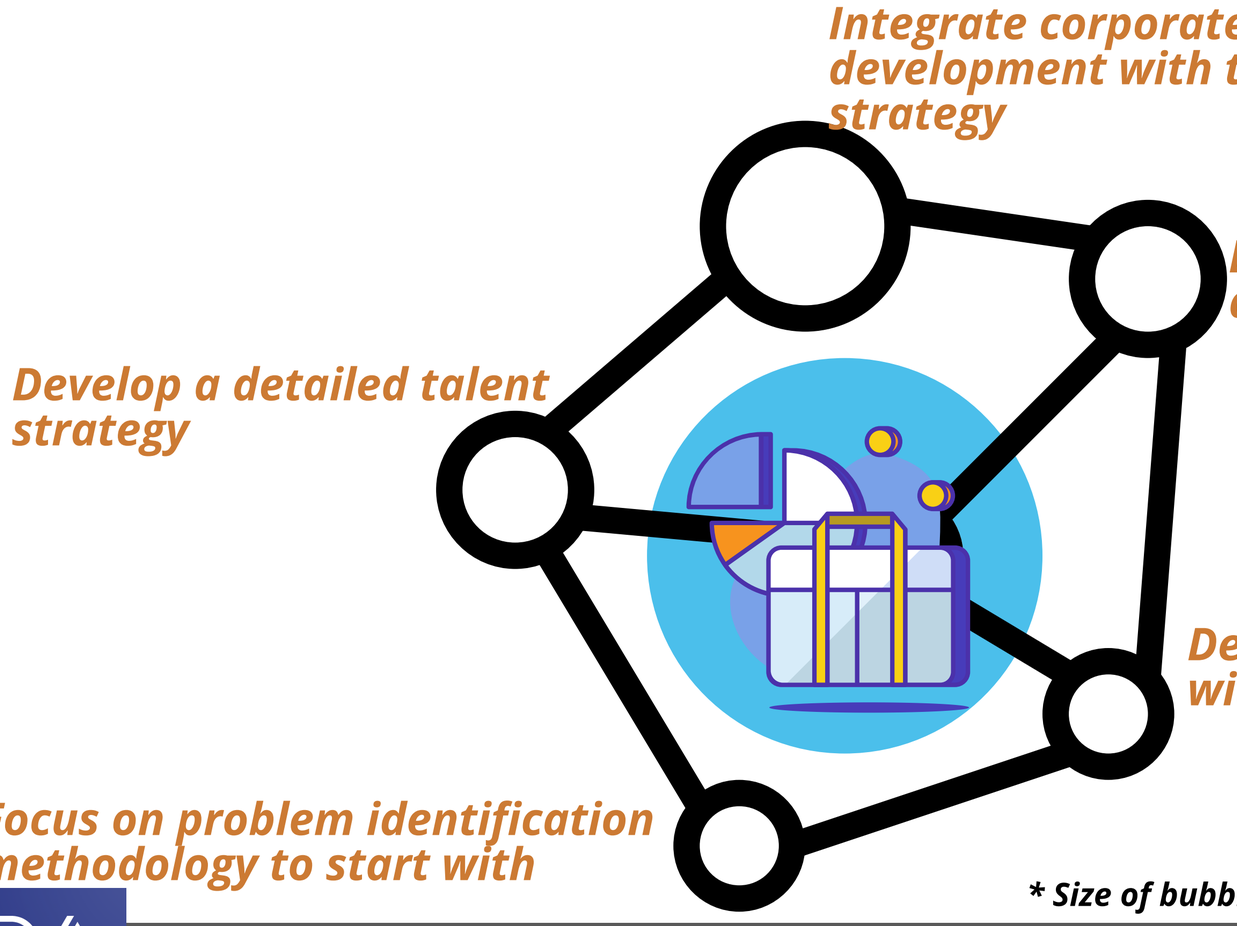
The driver behind this is that we tend to jump on building a capability that essentially needs some foundational capabilities to be in place. And no matter which technology gets you excited, unless you build those foundational aspects, the cycle of doom, of trying to build same capabilities every few years, will never end.

Rather than suggest what amazing things AI can do, I propose building foundational capabilities each year. Even though I see companies still focusing on chasing the next shiny things, and despite the fact that talking about generic jargon get more engagement, I will again focus on five key areas that companies should focus on, this year as well.

Organizations need to focus on developing their technology strategy, which drives data and analytics strategy, in-tandem with corporate strategy. Data architecture strategy needs to be a key component of technology strategy to build a robust foundation. For analytics, focus should be to push as much advanced analytics to the edges, to those who work within processes and to the domain experts, as possible. Develop capability to efficiently identify solution areas rather than which algorithm you can use. Last, but not the least, invest in a detailed talent strategy.

As you can see in *Figure 1*, these focus areas need to sync together to build an effective foundation.

Figure 1 : Five focus areas for data and analytics



**** Size of bubbles does NOT indicate relative importance of focus areas***

Focus 1

Sync corporate strategy with technology strategy

Organizations have followed rigid approaches and frameworks for decades to define their corporate strategy. Those decades were the era when technology was primarily a support function. It had no role in shaping the strategy of a company. In fact, technology was so low in hierarchy that it had no strategy of its own. IT department's strategy was to implement and operationalize systems that can help keep the company running. Then things changed!

From the corporate strategy perspective, two key aspects emerge at a high level. The first one is that the era of defining vague corporate strategies are over. Second, you can not formulate a detailed corporate strategy without including technology in the narrative.

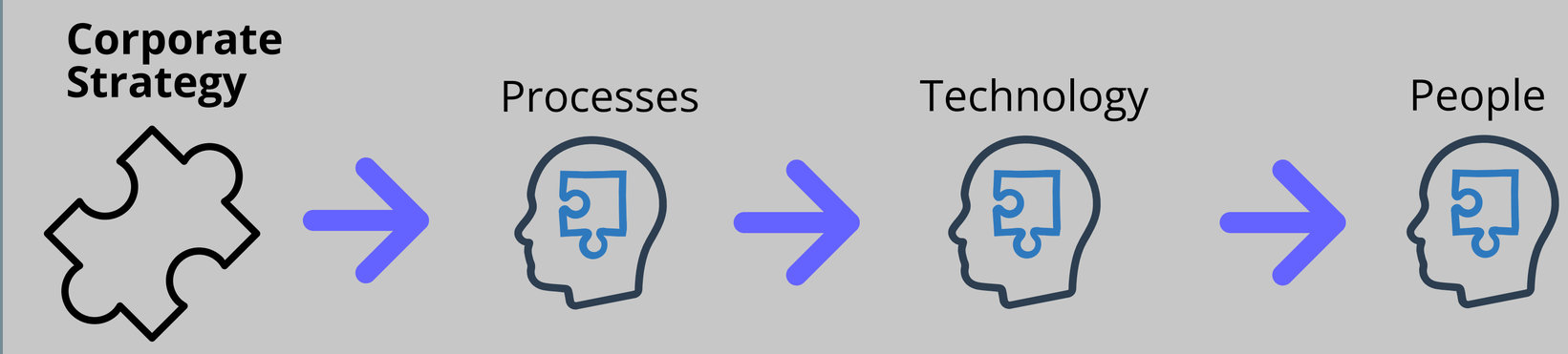
So as you embark on your 2024 goals, the most important focus area I suggest is to understand what role data and analytics will play in defining your company's corporate strategy and future. And that can never be done until you have developed your corporate strategy with a technology strategy.

Consider a large retail company. Technology must play a role if the strategy is to enhance customer satisfaction and perception, thereby increasing foot traffic and profitability.

One reason is that you need data and analytics capabilities to validate if foot traffic is actually a problem. But the relevant one for our context is what role data and analytics will play in supporting this strategy. This is like peeling the layers of an onion, the onion being your corporate strategy.

Continuing with this example, even if you decide not to do anything else (like understanding your customer better), you will still need to advertise and market. And that is where SEO advertising comes into play. Many retailers are unaware that they can leverage technology, specifically ML, to get more bang for their bucks, when it comes to advertising. The same goes for channel optimization in marketing. Technology is powerful. Technology is the supreme enabler. Technology must be a prominent part of your corporate strategy. But technology is essentially useless without people who know how to leverage that technology. An example flow of strategy is shown in ***Figure 2.***

Figure 2 : Leveraging a people, processes and technology lens



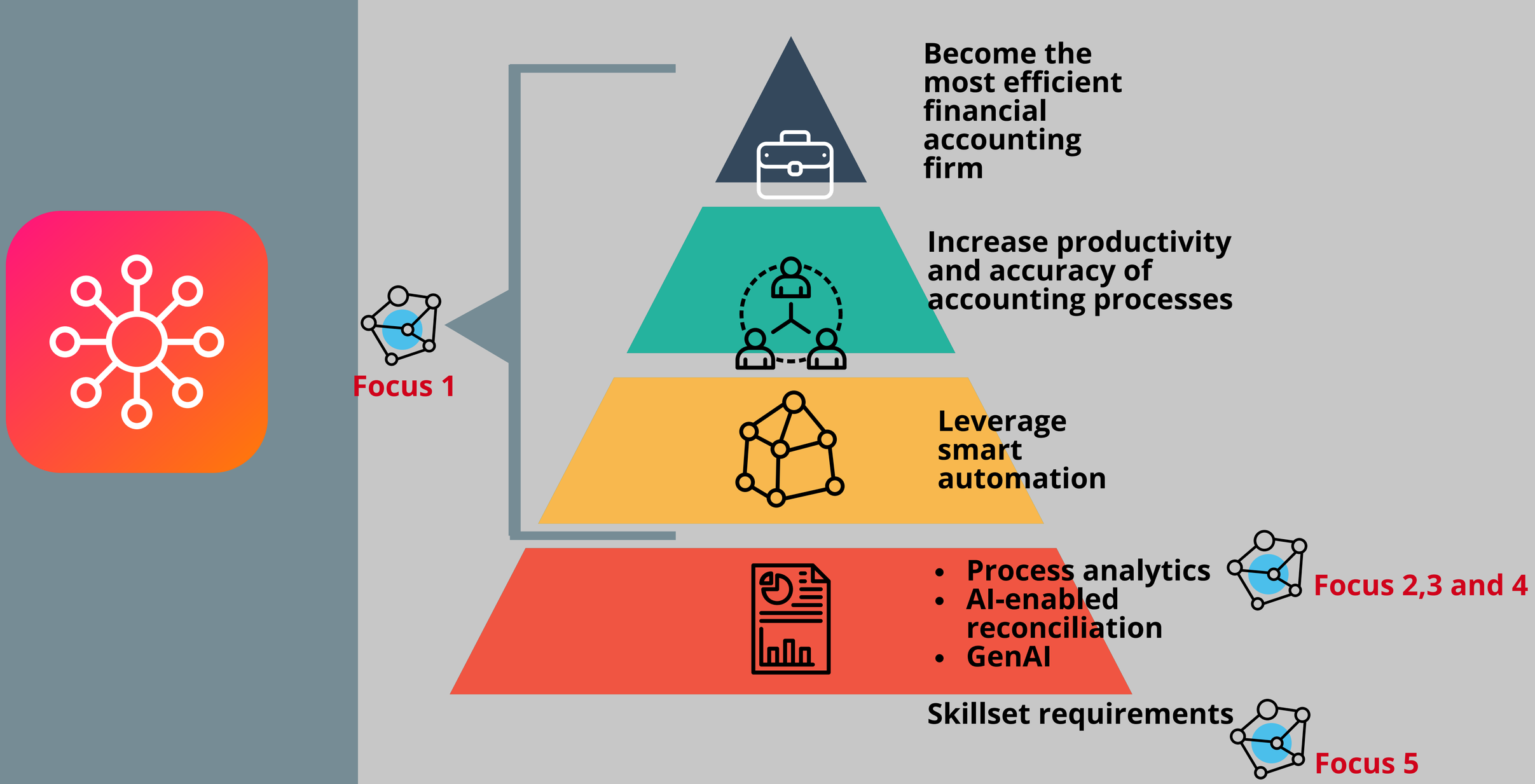
So when you define your corporate strategy in 2024, they need to go beyond the high-level strategy into your strategy's people, processes, and technology aspects. You start with the overall corporate strategy, which then translates into a functional strategy. You will then need to develop a process transformation strategy to build the capabilities required to support your strategy. That transformation can't happen without technology. Hence, it is critical to understand the role technology plays in any organization's corporate strategy.

Same goes for your cloud strategy as well. Cloud strategy, a part of your technology strategy, also needs to be tailored around your corporate strategy. Eventually, based on your technology strategy, you need to develop your talent strategy in tandem with functional strategies.

This is important since it also defines the journey of our five focus areas. Our remaining four focus areas can not be translated into action plans without effectively performing this exercise in the first focus area. These focus areas are interlinked. Changes in one area will impact other areas. Hence, these focus areas need to be tackled in unison.

Figure 3 provides an example of how corporate strategy flows into data and analytics strategies and, hence, needs to sync tightly with it. We can also visualize how the remaining four focus areas emerge from this relationship.

Figure 3 : Data and analytics strategy from corporate strategy



Focus 2

Develop your custom data architecture strategy

An article I wrote in early 2023 suggested that organizations should focus on building a data foundation in 2023. Having that foundation essentially takes care of a foundational strategic capability that can help accelerate any form of digital transformation. It is like putting together a custom canvas. It is difficult to build this canvas from scratch, but once you have it, the possibilities of what you can paint on it are plenty.

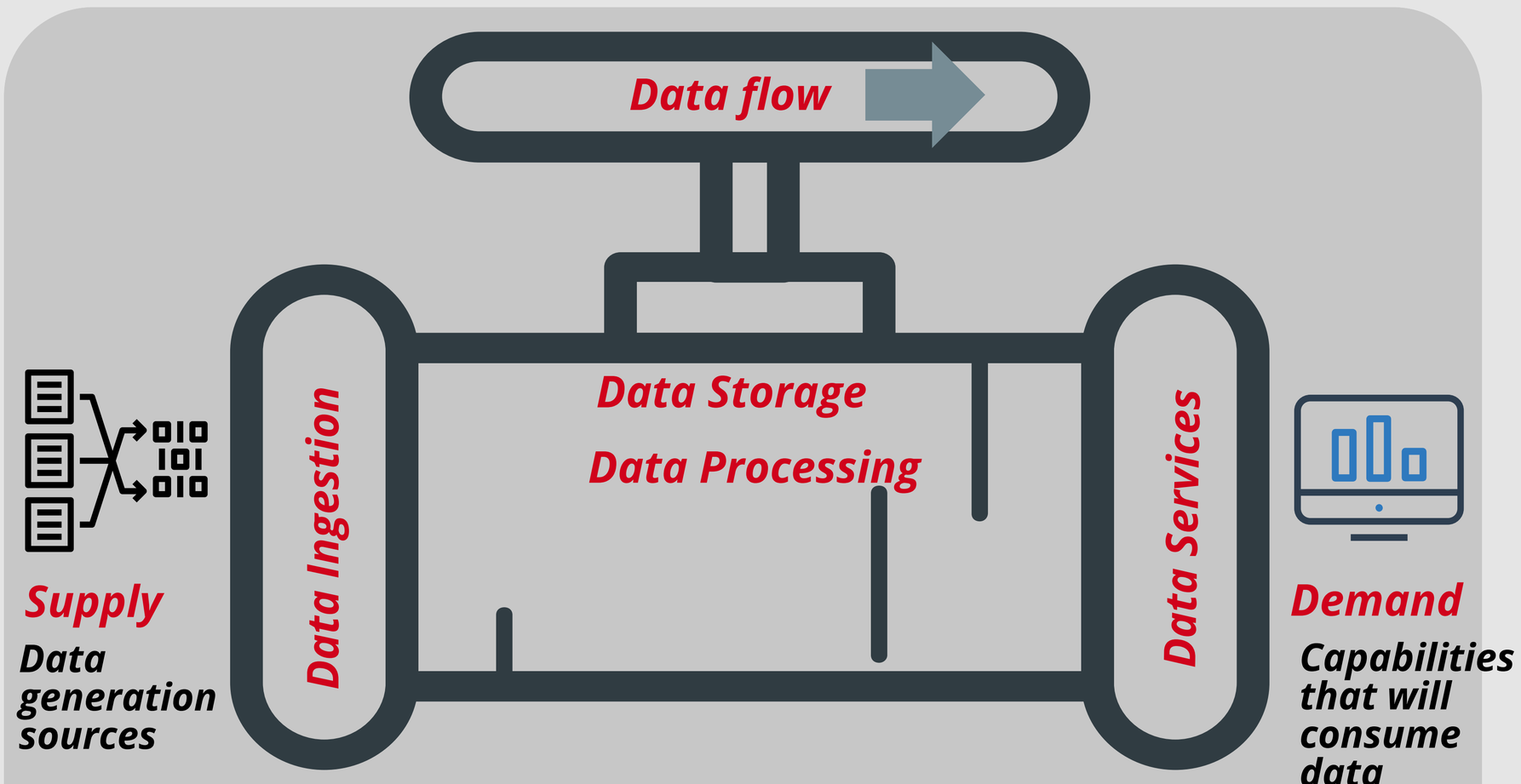
The challenge many organizations run into is how to think about building a data architecture strategy. Since we are already talking about canvases, let me suggest a data canvas method, as shown in ***Figure 4.***

Your current and future state data generation sources are at the far left end of the data canvas. At the far right is your vision to leverage that data, i.e., capabilities that you want to build, leveraging that data. So, essentially, you have supply and demand on both extremes, and you want to build an optimal "supply chain" to connect demand with supply. That blank portion between these two is your canvas.

But it is not that you have to strategize everything in between. We know what architectural elements need to fall between the two ends, as shown in ***Figure 4***.

Your data must flow from the source(supply) to the demand, which are the digital capabilities that consume the data. Just like supply chain flows, there are many intermediary entities to aid that flow. You have to formulate your data ingestion capabilities, storage capabilities, and the data services you will need before the data reaches the final consumption point. And as you may have inferred from the first focus area, your corporate strategy elements, which interface with technology strategy, will eventually provide inputs to fill in the canvas in ***Figure 4***.

Figure 4 : Data architecture strategy canvas



In some cases, an existing data architecture archetype may be a perfect fit as well.

Also, you can leverage more than one archtypes in your overall architect ure. Regardless, it is important for you to understand the most commonly leveraged archetypes. Some examples of typical data archtypes have been illustrated in ***Table 1***.

Table 1 : Typical data archetypes

Data warehouse (cloud)	***Primarily SQL-driven warehouse platforms in the cloud. These are highly scalable and can be leveraged to implement data transformations that are SQL-driven or can be managed using augmented ETL tools. These warehouses can handle a vast majority of enterprise analytics loads. Since they are primarily SQL driven, the skillset needed is abundantly available.***
Data lake (cloud)	***Cloud-based data lakes are serverless centralized data architecture based on object storage. These are like data marts and can store a wide variety of data. Data types typically stored in data lakes can help support both SQL-based analytics as well as more advanced AI and ML based analytics.***
Lakehouse	***Lakehouses are a combination of data lake and warehouses. These platforms combine the benefits of both these methodologies into a single platform. Like a data lake,lakehouses can help support both SQL-based analytics as well as more advanced AI and ML based analytics. These platforms can handle both complex batch data jobs as well as real-time streaming data.***
Data mesh	***A departure from the centralized data architectures into a decentralized model. The decentralized approach is focused on data products which are fully owned by business domains. These data products are already normalized and transformed, meaning they have been quality checked, validated and cataloged. These data products can be accessed through data services.***
Data fabric	***Objective of data fabric platforms is to build a unified data environment across the entire organization's data landscape.It derives its name from the fact that it provides the capability to stitch together the data across the landscape into one unified data management layer through metadata. It address the challenges that emerge from multi cloud scenarios.***

Focus 3

Push analytics to the edges of your organizational resources

Even if you keep all the AI buzz aside, the whole world is going ga ga over analytics. However, if you look at leading surveys out there, majority of organizations, despite having invested in best of breed tools and technologies, are struggling to become truly data driven. The disconnect is in two areas. One is where organizations do not have the right set of talent. That has been discussed as a separate discussion point in this report. The second critical driver is the way analytics capabilities are built in silos within organizations.

If you are building an analytics CoE in 2024, then you have already embarked on a wrong strategy. The focus should be on how to infuse analytics on the edges of your organization, in the hands of those who work within the processes and in the hands of domain experts. Centralizing the capability into few teams is, in my opinion, a very wrong approach, in 2024.

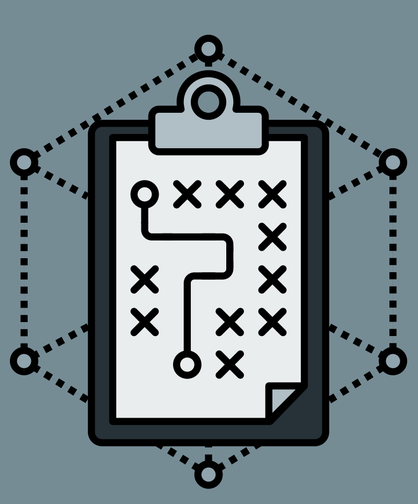
Our obsession with establishing CoEs stems from what I like to call the CoE mindset constraint. More than a decade ago, there were three primary drivers that led to the propagation of CoE strategy:

- Organizations were new on the road to become data driven.
- Tools available required more sophisticated technical skills
- Analytics skills were not abundant

That entire landscape has changed now but our obsession with CoEs has not. Unless you are a technology company, solely in the game of developing advanced technology and data science solutions, a CoE will do you more harm than good. Rather than democratizing your analytics, a CoE is centralizing it, no matter how hard you try. And as long as you do not turn those on the front ends of your organization into citizen analysts, you will not be able to reap the benefits of any digital transformation initiative.

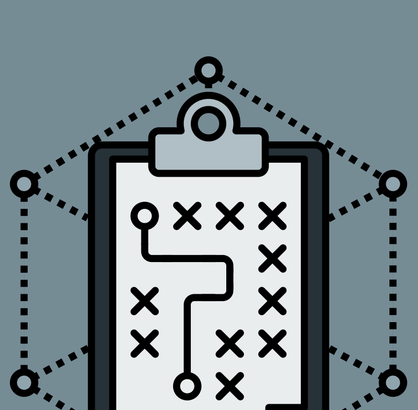
There is another type of CoE that organizations need. Not one that takes ownership of analytics and reporting for a function. One, as suggested by me in my numerous articles, that acts as the hub, in a hub and spoke model, as shown in ***Figure 5.***

Figure 5 : Hub and spoke model for analytics democratization



Domain experts and process experts working within business processes are enabled with analytics tools and expertise

The goal of data and analytics expertise in the hub is to develop analytics capabilities and then push those capabilities to the spokes



In the model shown in ***Figure 5***, the hub essentially exists primarily to develop solutions that will help accelerate the journey to develop more citizen analysts and data scientists.

Under this model, the hub does not perform BI or advanced analytics for those working within the processes and functions. The hub exists to enable those working within the processes and functions with tools and solutions that those working within the processes can leverage themselves.

As we will see in the talent focus area, the hub and spoke model translates into two separate categories of talent requirements. One leverages the lens of initiatives focusing on building capabilities, whereas the other concentrates on sustaining those capabilities.

Focus 4

Obsess with identifying the right problems to solve, not with algorithms

Don’t get carried by which AI algorithms you can use!

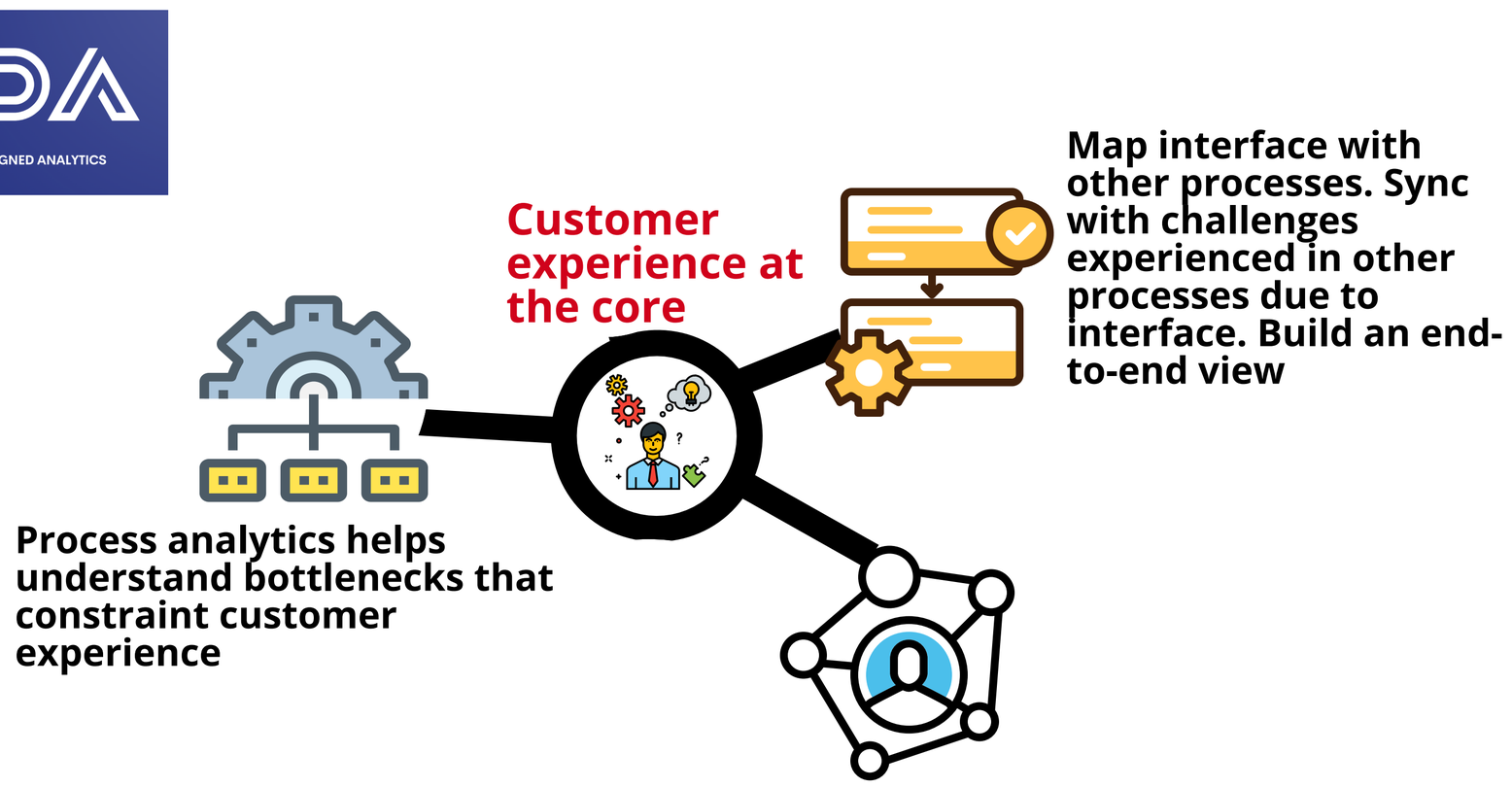
This is a theme that I have emphasized consistently. However, the key here is to obviously define a robust process around identifying the problems. While it is difficult to do so, in this age of extreme AI hype, the first critical step is to forget about algorithms and AI jazz. That is the sole reason I have not included a list of analytics tools and algorithms to explore. Remember that when you hear that 85% of ML initiatives fail, the translation is that most companies are not yet ready for analytics initiatives that are imperative to execute in this decade.

You will find a plethora of “cheat sheets” focused on mapping types of problems with ML algorithms. But the secret sauce, in my opinion, is in the steps before that.

I emphasized last year and have included data architecture as a key focus area again this year because having that foundation in place gives you the fundamental capability to identify and understand your problems- the capability of visibility. Human inputs are also critical to understanding a problem's nuances, but the starting point has to be data. I have seen instances in my career where we were approached with an “excess inventory” problem, which turned out to be a transportation-driven issue. You may be told that the customer attrition problem is driven by pricing, but data may suggest it is related to poor service execution.

This does not mean that your people's insights are lying to you. Most organizations have not reskilled those working on the frontlines to leverage data as it should be. Most teams also work in silos and are hence focused on their problems. So, unless you have executed a talent strategy effectively, like the one identified in the report, you must leverage data to identify and validate a problem.

Figure 6 : Standardizing the process of finding problems to solve



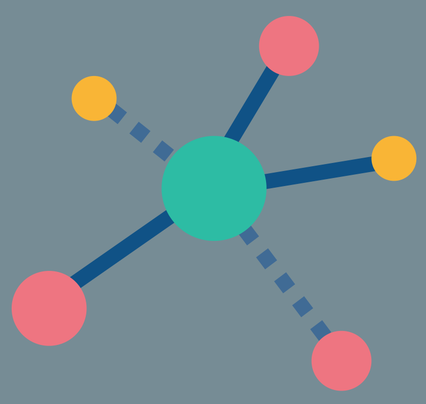
Once you have the right level of visibility, the next key aspect is to understand if it is worth solving. Most organizations exist to serve end customers. Even if, at a high level, you may feel that you are solving an issue plaguing your employees, the fact is that the solution will eventually translates into a better customer experience.

The second key area is to try to understand if you can use your existing portfolio to build a solution. There are elements to that as well. In some cases, you may be able to build a solution using existing tools, but it would be a band-aid approach. In that case, launching an initiative to build a data & analytics solution around the problem makes sense.

Ditch the cheat sheets!

I suggest you include customized questions in RFIs if you are looking for external vendors. As I have mentioned in my daily videos, most companies that have become “AI solutions” providers are not equipped to build or design solutions beyond the vanilla cheat sheets. The best way to understand the capability is by asking customized questions around your specific problems and making sure that the answer does not include a previous use case but an actual answer to your specific problem.

More and more analytics tools today are expanding the portfolio of algorithms they include in their platforms. You may not need to build a custom solution or algorithm. ERP providers integrate AI capabilities in their platforms now. Hyperscalers offer a wide gamut of tools and solutions. But if you really need to build a solution from scratch, it is inexpensive unless you want to develop your own GPT. So don’t get intimidated if you believe the algorithm requirement is complex. The solution is probably already out there.



Focus 5

Develop a detailed and layered talent strategy

We have seen in other focus areas that talent strategy is a critical element in helping realize your corporate strategy. Your people will eventually leverage every technology that you invest in. Hence, the success or failure of your every data and analytics initiative depends on your talent strategy. There are two broad strategies that you will need to formulate. One leverages the lens of initiatives focusing on building capabilities, whereas the other concentrates on sustaining those capabilities.

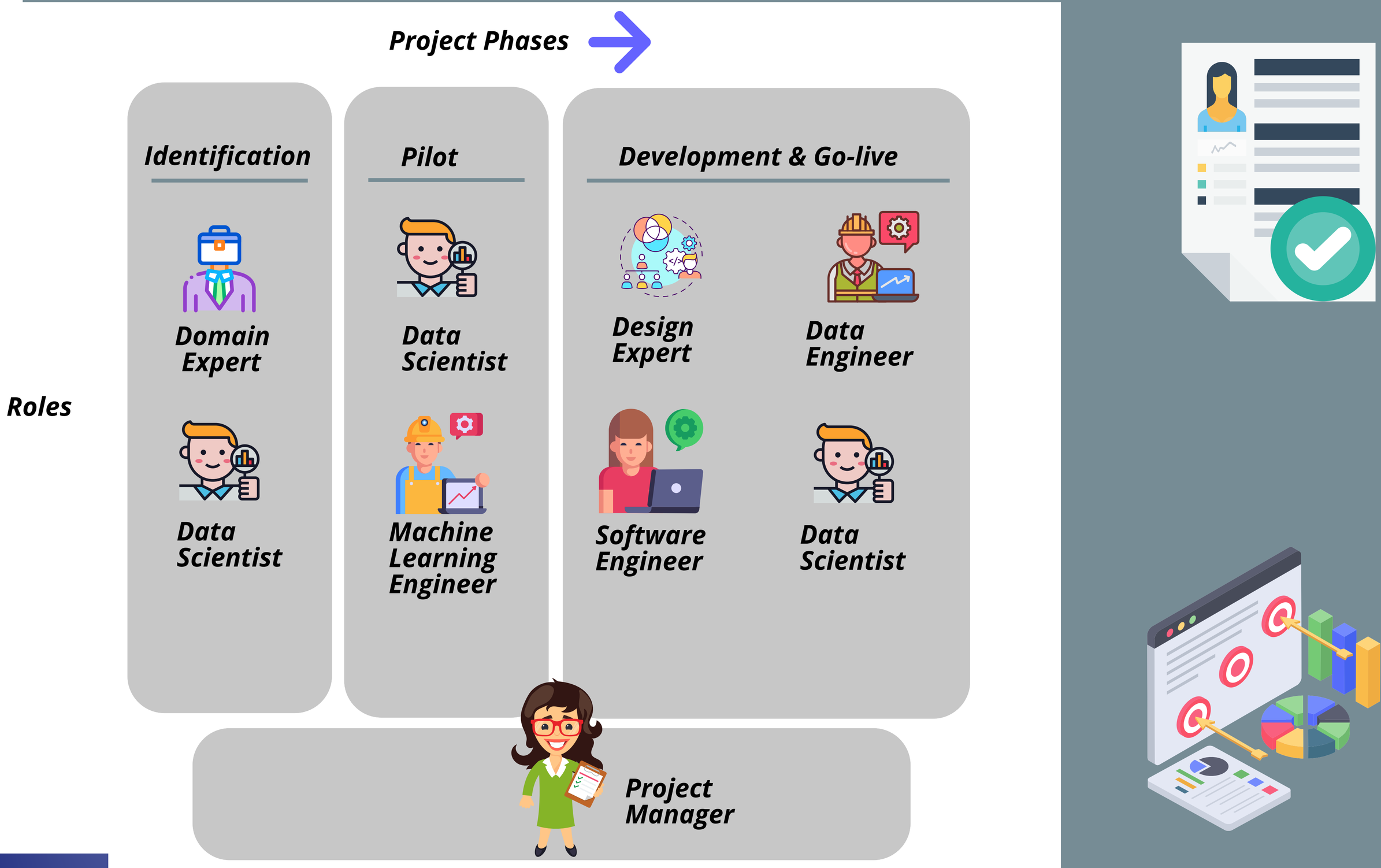
Though not starkly different, talent requirements and management will have certain unique nuances for each of the two lenses mentioned above. The primary reason I say both requirements and management, is because we tend to focus too much on the type of talent needed and forget that we are required to retain that talent for a specific minimum duration as well.

Figure 7 below illustrates one possible way to start strategizing about talent requirement planning for new initiatives, across these three phases:

- Identification
- Pilot
- Development and Go-live

The key is understanding the roles you will need for each phase. Then, obviously, for each role, you will be required to define the responsibilities. These will be based on the capabilities you need to develop so a comprehensive review of capabilities is necessary since you obviously don't want to hire for each project.

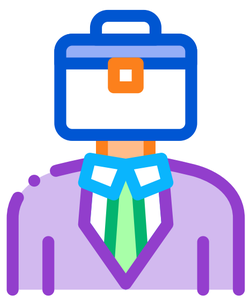
Figure 7 : Strategizing talent requirements for the hub based on portfolio of projects



The next set of talent that you want to build is the most critical in my opinion- analytically savvy people working within the processes.

Figure 8 below illustrates one possible way to start strategizing about talent requirement planning for sustained capability. A fundamental input for this strategy is the "analytics on the edge" focus discussed before. This also assumes that the solutions that have been built have been designed to be aligned with the "analytics on the edge" strategy.

Figure 8 : Strategizing talent requirements for the spokes



Domain Expert

These are subject matter experts who work closely with the hub for developing analytics capabilities and solutions that actually address a problem. Within the spoke environment, these experts continue to provide inputs for continuous improvement to product owners.

Product Owner

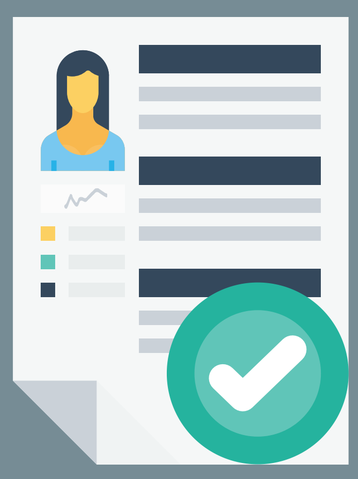
The product owner within each spoke is the primary interface with the hub, post deployment, and is also the interface with the business analyst and rest of the users. Think of them like part-time product managers who devote 10-20% of their time on this work.

Process Analyst

The process analyst is the most technically savvy person in the team and has trained to become technical expert on the tool/solution. They are the go-to person for the team when it comes to understanding how to best leverage the tool. They work closely with product owners.

Users

These are the people who work within the processes and use the tool on a day-to-day basis.



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