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Dave Wentzel's Videos

Design Thinking

The main problem when trying to integrate a new technology into your business is that it is something new that people will have to adapt to. This alone gives them every reason to push back on such innovation. Additionally, there are a lot of risks when making major changes to your company's system, processes could be slowed down, customers could be unable to submit orders, employees could be locked out, etc., and the benefits are not always clear. On the other side of things, some people may be all for innovation, but not actually have any idea about what goes into actually making a system work. They may just want to "throw some AI at the problem" to lower costs or increase sales. They may use the wrong terminology or even not really understand what they want out of the data, such as saying they want predictive analytics, when what they actually want are prescriptive analytics to help them make the most optimal decisions. This mixture unwilling participants and ill-advised leaders is the reason why so many innovations can either be halted indefinitely or cause major problems.

Design Thinking is a method of presenting a technical project to people on the corporate side so that they are both willing to get on board and are able to understand what is going on. Simply put, it is catering the presentation to speak on the goals that align with your listener and how it will affect their day-to-day. However, this leads into the secondary part of the problem, which is that the most visually appealing and understandable presentation my only be possible with a sub-optimal system of data. For example, there is the star schema in data warehouses. There is very little needed data literacy to be able to understand the data it holds, but that lack of complexity comes at the cost of ultimately making it not very useful. Other methods, such as

incorporating a data lake and lake house, while more effective, can make presenting it to people on the business side very difficult, and it may not be fully possible to bring them on board to approve such a project. Additionally, more complexity also means more time and resources put into the project, furthering its lack of appeal for the business side.

Despite how disagreeable members of the business side may be, it is important to not just lecture to them about data importance, but to act as a guide and facilitator so that you can find out what they actually want for their specific problem, and then use your knowledge to find methods that can fit their needs. Given that there are so many obstacles, it is important to understand a wide range of techniques to better present from the IT side to the business side. One such type is the rapid prototyping. Simply, it is a 3D scale model of some real-world object or location that is able to be made fairly quickly and at low cost. It can help the persuasion of your presentation because you can show what the finished product should look like before actually getting into development. With the advancement of 3D printing technology, this can be further enhanced so that it is not just a computer 3D model, but an actual 3D model. Another important piece to understand is the feedback loop. A business could have been trying to forecast sales based on data from previous years. Their algorithm could be perfectly fine in most cases, but occasionally give very nonsensical results. A solution to this problem could be by creating a feedback loop. This is a method of having people rate the machine's predictions. In the case of sales forecasting, it would mean having the salesmen say whether the forecast was good or bad. If it was good, then that data that created the prediction has now been human approved and can be used again. However, if it is bad, you could eliminate it, or you could try to find out what about the data resulted in a bad output. Throughout all the salespeople's bad forecasts, there could be patterns that can then be used to fix the system. With all that said, a more advanced

system may be able to rate its own data, but more likely this will require human review, and here it is important to get your employees on board to regularly give an accurate good or bad rating to a forecast and then for them to give a reason that made it bad. Getting them to do this is a very big help when finding the problem in the system and making an adjustment. With a more advanced system, however, something like ML Ops (Machine Learning Operations) can be used to train the system to rate its own outputs so that it can be self-optimizing. Two things to consider, though, are that getting an employee rating can still be very helpful and data scientists will be needed to help the system in its machine learning by making sure that it is doing so properly.

Another part to consider is how many parties need to be involved in setting up the system. Some companies, known as end-to-end solutions, offer everything from starting a system integration to bringing it to completion, including all the hardware and software involved. Who you will need to work with and how many groups you will need to work with can significantly affect the time and cost of a project. Additionally, different companies offer packages that fulfill different needs. One example of a need is in companies that focus heavily on users using their system, such as Amazon, Google, and Twitter. They require a good user interface, such as REST API (Representational State Transfer Application Programming Interface). It is very compatible with normal internet use. Therefore, it is both easy to implement and more familiar to the end user.

Understand the different methods and techniques on both the tech side and the people side are vitally important for the successful implementation of any project. Just "throwing AI at the problem" is not a good idea, but even trying to just throw "math" at the problem may cause a skewed perception of the situation. A sales "trend" over four weeks is probably not a trend at all,

even if it can all be put neatly into a graph. It is possible that there is just not enough data at this time to accurately explain the situation. Certain customers losing interest in your product may seem like a severe problem, but it may just be the result of their satisfactions currently being met until they need to come back again. Despite all the advancements in machine "intelligence" what will always remain important is having the intuition to make good judgments on the way the outputs are being looked at and interpreted so that those interpretations match what is actual occurring. Then, the next important step is to properly present that data so that everyone involved can properly understand the situation, its costs, and its benefits.