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Learning from the reasons why projects fall through

Optimal solution of the process towardsAI implementation

AI is booming in Japan and many companies have been moving forward with PoC (proof of concept) of AI projects. However, many AI projects are also suffering hardships. It has even been reported that more than 90% of AI projects either end before they begin or fall through. They often do not even reach the stage of implementing AI into the actual operating stages So what is the reason for not being able to go further beyond the PoC stage? Let's put our heads together to try and understand what kind of perspective is necessary in order to ensure the success of these projects, as we look at the reality of AI projects.

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Qualities required in AI project members

First of all, in order to move forward with an AI project, we definitely require AI project driver, who are in charge of driving it forward, and data scientists.

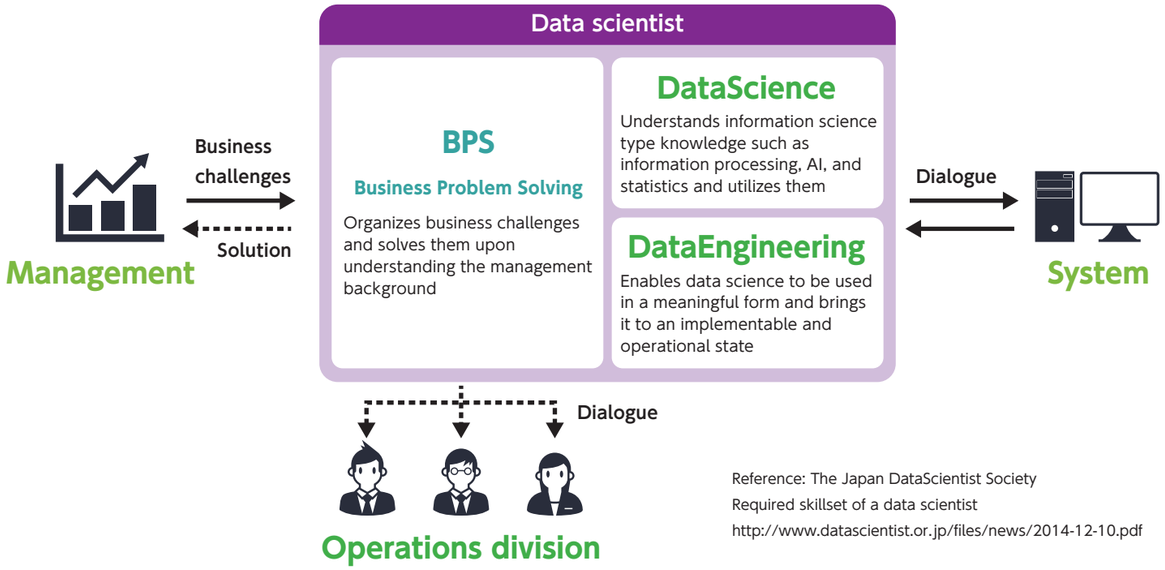
Let's think about the skill sets required from driver whose main role is the promotion of AI.

Three skills of a data scientist

AI is garnering attention as one of the key technologies of the fourth industrial revolution. AI, which enables computers to think for themselves and present us with certain results, is now expected to be utilized in various industries as something that will provide new added value in business and as something that will lead to significant improvement in existing business operations.

In order to utilize AI, it is essential to have a data scientist who supports business decision making through data analysis. A data scientist must have three skill sets: data science skill which involves being knowledgeable on the information science field such as information processing, statistics, and artificial intelligence; data engineering skill which involves being skilled in IT and allows the implementation of data science in a meaningful way; and business problem solving skill which enables the understanding of business challenges and the performance of analysis in order to bring light to AI.

It is important to aptly utilize these three skills required in AI utilization in order to move forward with a project; however, the reality is that many AI projects fail. What is considered to be the back-ground factor of this is the inability to properly bring to the table business skills that connect business challenges with AI. Especially with business skills that require sufficient experience among these three skills, the United States has much more experience than Japan and has gone through as many failures as they have successes. In order to bring an AI project to success, it is important to gain experience in these business skills.

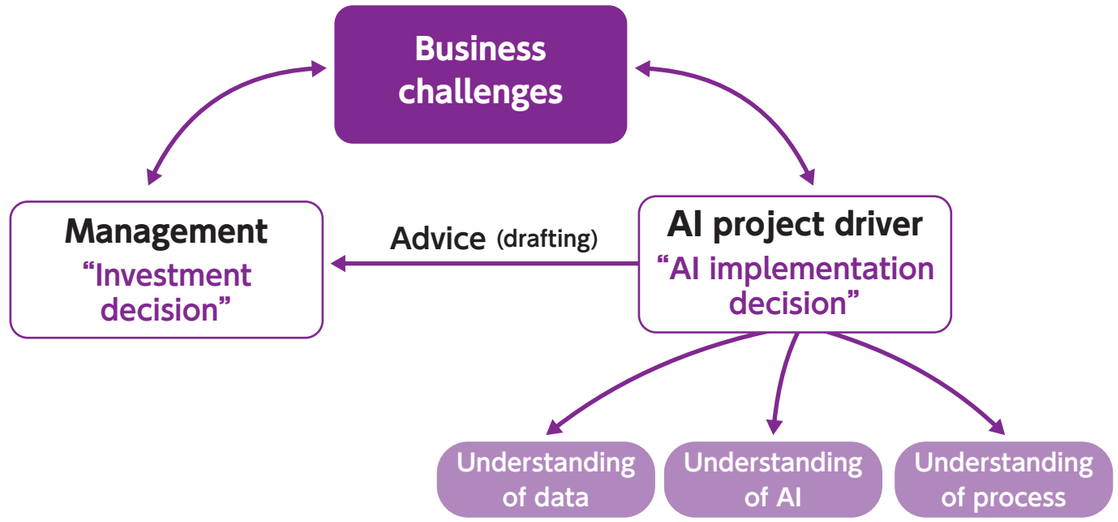


Reference: The Japan DataScientist Society
Required skillset of a data scientist
http://www.datascientist.or.jp/files/news/2014-12-10.pdf

Attitude necessary for AI project personnel

So far, we've talked about the three skills required of a data scientist. However, there is an additional qualification necessary for AI project driver. One that is considered the most important is the ability to control expectations from management, along with the ability to skillfully adjust expected values. Some lament over the fact that they do not receive sufficient understanding from management; however the reality is that very few managers and executives understand AI. Rather than pointing out the lack of knowledge by management, by properly controlling the expectations by management, it is possible to significantly increase the success rate of projects. Particularly among those in management who perceive IT intuitively, it is important to control the excessive expectations towards AI by management as you deepen their understanding on the difference between IT and AI.

Further, it is important to gain the trust of management and be in a position such that you can provide good advice to them. In other words, AI project driver must possess the attitude of a right-hand man. Actual project personnel would say things like, "Management says this and that" or "I have to check with management"; however, it is important to work on projects in a position to provide ideas to management rather than seeking ideas from them. To begin with, the main job of management is to make investment decisions having to do with business challenges, while the main job of AI project driver is to make implementation decisions based thereon. Put plainly, the job of AI project driver is to give advice or make proposals regarding the investment decisions of management, so they are required to have a good understanding of business challenges as well as data, AI, and the processes thereof.



The reasons why AI projects fail

So far, we have looked at the skills required from human resources related to AI projects, but why do so many businesses fail when implementing AI projects into business operations?

The cause of failures in AI projects lies in “over-dependence on technology”

With AI projects, there definitely needs to be a stage for taking on a technical approach; however when working on a project with AI at the core, the targeted outcome through the AI project becomes blurred, leading the project to fail. One reason for this is the lack of ability to bring business problem solving skills to the table, wherein you understand the business challenges and perform analyses in order to connect them with AI.

Many focus on technology, failing to grasp the real business challenges to be solved as a project in advance. It is necessary to fully understand the business aspect in regards to what business challenges are to be resolved through the use of AI.

Many cases fail due to an inability to abandon the common knowledges of IT

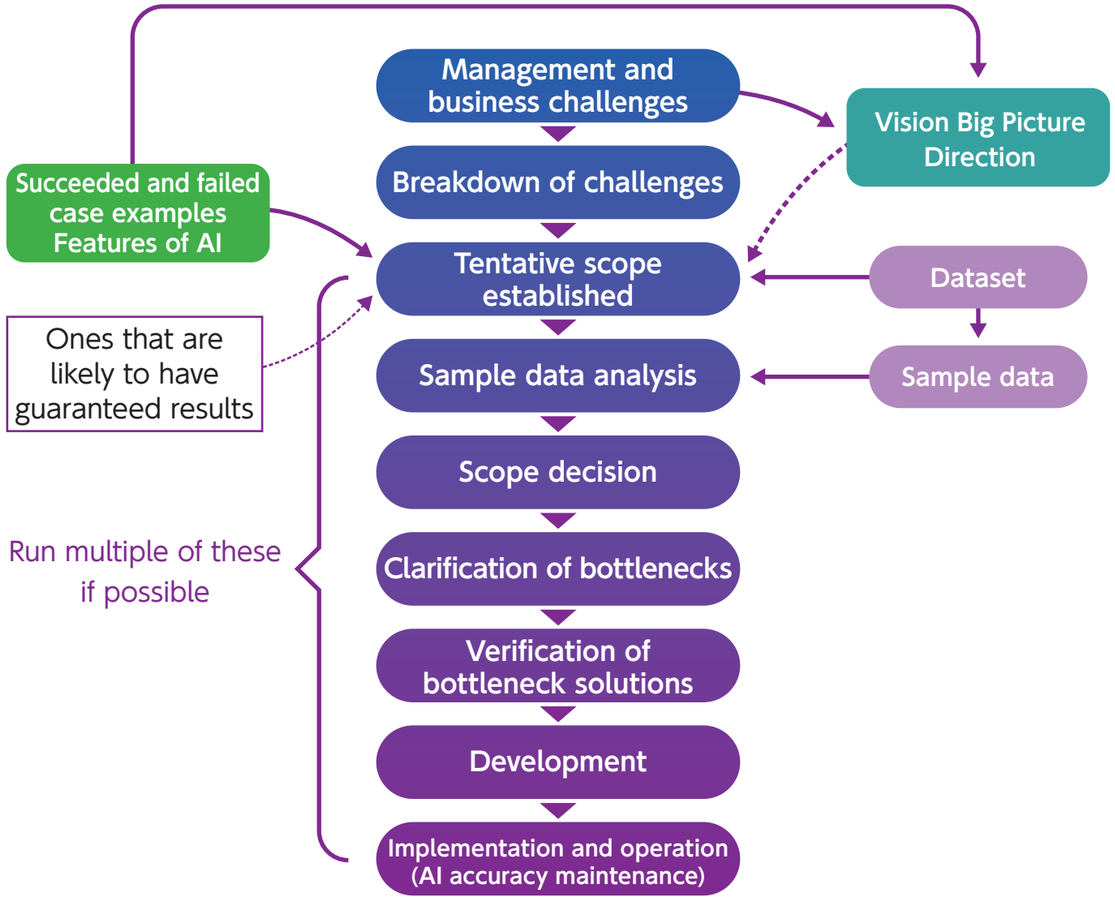
Some companies struggle to move forward with PoC after planning to start one regarding AI. The reality is that many do not understand the differences between AI and IT and struggle to change the ways in which they have done things with IT projects. They simply cannot abandon the common knowledge of IT. To begin with, AI is something you cannot understand unless you actually get involved. Even if you plan things as you did with IT, things will not go as planned. It is important to move forward with such an understanding on AI and not drag out the common knowledge of IT.

Especially with AI, many utilize machine learning whereby it learns from continuous training and produces results by learning as it collects data. AI is something that produces results as it gradually learns, so there is no need to give up even if the initial positive results are small. In that sense, what is important is being able to envision a scope by which to gradually produce results and improve the effect thereof. However, many envision a scope in which they expect instant results, leading to projects that fail.

Misunderstandings in the “process” seen in many projects

In the investigation and implementation of AI, as well, there is a process that leads projects to success. As such, we will look at the process towards success in AI.

Process of AI investigation and implementation



Clarification of management and business challenges should be the starting point

The starting point of the process should always be the management challenges and business challenges. You should clarify the management challenges if you are going to work on them as a company as a whole and the business challenges if you are going to work on it as a business division. It is also necessary to have a rough idea of the vision, big picture, and direction upon having a good grasp of the features of AI along with successful and failed case examples. In any case, clarifying the primary challenges within your organization should be the first step in your project.

Provisional scope should not be determined based on the data owned

Next, we will break down the challenges in detail. It is important to break them down to a minimum level at which they can work as an AI project and then set a tentative scope. This scope is still tentative. You should consider if it coincides with the rough direction set and if there is a dataset to achieve such a scope. In many cases, the projects are determined based on the data which already exist. While it is indeed important to have data, there is a good chance that it will not coincide with specific business challenges and end up aiming for as something that does not align with your vision by forcefully chopping logic.

A feasible scope in small units should be set that is likely to produce results

While still a tentative scope at this point, many failed projects appear to have set scopes indicating project results that are too big. We understand you want to work on scopes that are likely to have a big impact. However, projects always fail when they start with a big scope. The scope should be a feasible one in small units that is likely to produce results right from the start.

It is important to analyze success using sample data in advance

Next is sample data analysis. Many failed projects have decided their scope without this sample data analysis process. Extract sample data from datasets and analyze it. If you still think that the project would actually produce results, then officially decide on the scope.

Clarify bottlenecks and do not create systems based on PoC

Once the scope is determined, you should clarify the bottlenecks in the process. Elements of bottlenecks discussed in many cases are usually “AI performance and accuracy” and “implementation to operation.” AI does not give you a 100% accurate answer. Therefore, it is necessary to consider how to incorporate a check flow into the business process.

Some projects start to fully work on the system even when all they have at this stage is PoC; however, the bottlenecks are the accuracy of AI and UI is not important at this point. All you have to do is check if there is sufficient accuracy with the data you have. You want to avoid wasting time and money by creating a system with UI.

Continuously perform maintenance keeping in mind the performance and accuracy of AI

Once the bottlenecks have been discussed, the process moves forward to development, implementation, and then the operation phase. During operation, you should check the status of performance and accuracy of the AI according to the flow incorporated in advance and perform maintenance work such as increasing the amount of training data according to its level towards improving AI accuracy. It is necessary to keep in mind continuous maintenance that allows for accuracy to not only maintain but improve rather than simply increasing training data.

Find one for which success is guaranteed while operating multiple projects

If the AI project is an important one that is essential to the growth of your company, it is important to simultaneously move forward with multiple small-scale projects in which success is guaranteed. The level of performance cannot be determined without an actual model. Therefore, if possible, you want to operate flexibly by simultaneously managing multiple projects while selecting one from among them that has the best performance on which you can place priority. It is essential to bring the very first project, however small, to success in order to manage in-house AI projects.

In order to bring an AI project to success, it is necessary to first re-evaluate the skills required of a data scientist, then fully bring to use the skill to adjust and control the expected results from the management and check the proper processes as you simultaneously operate multiple projects. If it is too difficult to move forward in-house only, you should also consider bringing in an external support with good experience in AI projects. Move forward with projects, keeping in mind the optimal processes in order to utilize AI in your business.