Intelligent customers demand intelligent solutions

One way to define intelligence is the ability to predict the outcome of different circumstances and/or construct a scenario to get the desired outcome. If all the situations are pre-defined and outcomes are pre-established then this would require little or no intelligence.

Intelligent systems have two traits in common: their ability to model the environment and their ability to change the model (learn) to perform better. If it takes you 30 minutes to commute to work using your car, then this is a well-established model.

Over time, you can also learn that on certain days when schools are closed, it takes less time or if you were to car pool, you use less gas but it might take more time. So depending on your options, you can make decisions to "optimize" the desired outcome. Another option is to use a bicycle, more time but less expensive and healthier choice. Will it work in winter? Depends what your objective is.

These are all the many ways that we use cognitive models of the world in order to make decisions.

With the above description of intelligence in mind, what follows outlines what makes Adexa applications intelligent.

Again, the two predominant reasons are: The ability to model the complexity of the environment, i.e. building a digital twin and the ability to learn from its experiences, i.e. intelligence. This implies, the more you use the system, the better it will perform.

Just like a person who has worked in a company for many years and understands the intricacies and complexities of the processes, vendors, customers and organizational issues, what we collectively call domain expertise.

To this end, Adexa molds itself and learns about what should be done and how it should be done in order to optimize the outcome. Attribute-Based Planning is the number one premise to be able to learn all the detailed complexities of the organization. Almost anything that you see and feel has attributes, or properties.

More specifically, customers, vendors, machines, trucks, and people. A more common attribute of a customer might be its priority. A vendor may have quality as one of its attributes and an end product might have texture as one of its attributes.

Let us now examine how we can use these attributes. Imagine a baby growing up, he associates with different people and different items based on their attributes that are of any relevance to him. For example, toys have attributes of colour and music.

"A digital twin is a combination of the representation (model) of the supply chain and how it behaves. Both are critical."

Intelligent systems in the same way, learn about attributes and apply them based on the desired outcome. For example, by understanding the delivery trend of a supplier, one can optimize production to make sure the deliveries are made on time. Whereas, A pre-defined lead-time can potentially lead to inefficiencies.

A system that is constantly watching the delivery trend can adjust to the vendor and either raise a flag to tell the users or adjust the committed dates to the end customers according to the changing trends. This can result in significant savings and much better customer service.

Another attribute of intelligence is understanding the causes. By uncovering the cause of an event (desired or not) one can use the cause in order to either promote or prevent the event depending on what is desired.

An example would be that a system is programmed to indicate that a resource is up 80% of the time. After a while, the system recognizes that it is up only 65% of the time. This is valuable information to adjust the digital twin of the supply chain to be consistent with the physical one. More significantly, the system can also look for causes.

For example, by comparing breakdown times and scheduled maintenance, it may be detected that maintenance is not done as required. Hence, corrective action can be taken. These kinds of dynamics are an integral part of any real-world model and need to be taken by supervising systems (people or otherwise). Intelligent systems can therefore observe and adapt to their environment.

Adaptive systems are often intelligent since by doing so they can achieve their desired outcome for survival and optimizing their performance.

In summary, intelligent systems can model the world, they can get better with time, they can find causes and they can adapt to accomplish the desired outcome.

In any enterprise, your systems need to do the same. They need to help you identify the changes in a very complex and dynamic, environment, they need to identify the trends (good or bad), they need to identify the causes and they need to recommend solutions that can optimize the desired outcome for the end users. Only this way can the enterprise adapt to the on-going dynamic changes of the market, suppliers, competition and organizations.

Many supply chain planning companies promote their best practices, best methodologies or best templates approach as a way of showing you the best way to implement their solution. Very often, this is a result of their inability to mold their solution into your specific requirements.
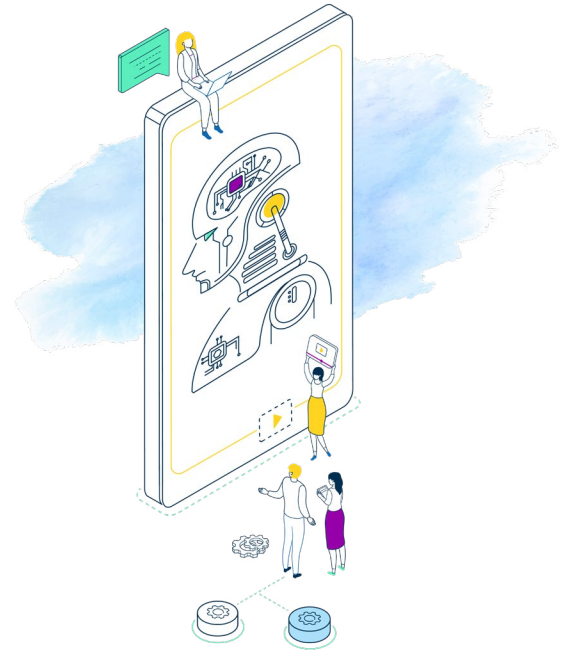
"Adaptive systems are often intelligent since by doing so they can achieve their desired outcome for survival and optimizing their performance."

So instead of molding their solution to your business processes, you have to mold your business processes to somebody else's approach who helped the vendor to come up with this template perhaps years ago!

Innovative and "intelligent" companies do not operate this way! They re-create themselves, namely their processes, all the time, they change and they improve. They need systems to enable the users to perform better, faster and more efficiently. Systems do not drive their businesses, processes do.

At Adexa, we believe in solutions that are intelligent enough to quickly and efficiently mold themselves around YOUR business processes. But even more importantly, can change as you change without having to pay for an army of consultants. This is done through a break-through technology that is unique to Adexa, i.e., Attribute-Based Planning. The reader is referred to **www.adexa.com** under Attribute-Based Planning for further detail on this topic.

A company's business rules are perhaps the most valuable IP that the company has. That is what makes the company unique and gives the competitive edge. Such rules and processes are designed by people with great deal of intelligence and domain expertise.

Business processes are designed by people who have demonstrated wisdom, expertise and years of experience in the industry. It reflects hundreds of man-years of expertise. If your system cannot reflect such intelligence, then what is it good for? Attribute-Based Planning does provide the uniqueness that is needed to deploy the very intelligence that is embedded in your company.

Furthermore, it will help to enforce the right practice until it needs to be changed. Then, it can be changed and institutionalized. This is what we call preserving intelligence and domain expertise. Adexa does this through Attribute-Based Planning which allows dynamically adapting to the changes in business processes. The alternative is customization after customization. Can you afford that?

To learn more, read Adexa white paper series on Attribute-Based Planning or send an email to **info@adexa.com**.

Let's make **accurate** plans together!

"We believe in solutions that are intelligent enough to quickly and efficiently mold themselves around YOUR business processes."

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