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Volume 20, Issue 11

## An Executive Guide to AI

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Last year at this time, any company that mentioned AI in its quarterly report saw its stock go up. Those days are over. Now enterprises are [struggling to show financial returns](#) on those early investments. There are still rewards for investment in AI, but analysts are more discriminating. Going forward, enterprises that have announced AI initiatives in previous quarters that don't report benefits from them in the current quarter are going to see negative repercussions. Companies that report damage from AI investments are going to see even worse.



This means that today's executives need to know how to navigate AI initiatives. To do this, they don't need to fully understand how the technology works. They do need to understand: 1) the various types of AI initiatives; 2) inherent risks; and 3) how to put an AI innovation ecosystem in place. With this basic knowledge they can capture the upside and avoid the negative repercussions.

## Types of AI Apps

Illustration 1 below shows the major areas for enterprise AI initiatives. The bottom area, Infrastructure, focuses on the basic systems that underlie all the other areas. Examples of systems in this area include, for example, communications, internal hardware, OSs, utilities, D/Bs, and external Cloud providers. Efficient and reliable operation of this infrastructure is a key enterprise activity.

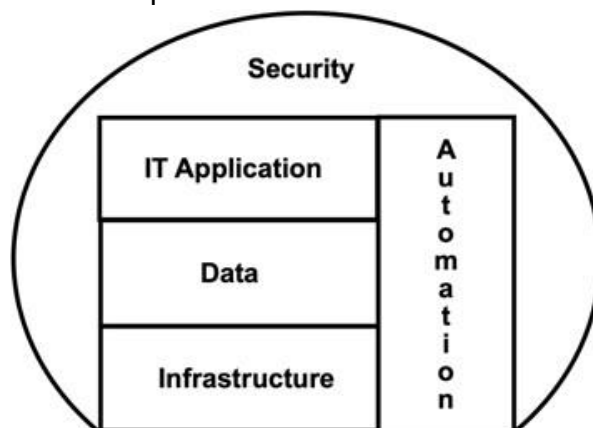


Illustration 1. Areas of Enterprise AI Initiatives

GenAI systems can now also be considered part of the infrastructure. The cost of creating a new

GenAI system is approaching \$1 billion for leading edge systems. This makes it hard to justify an enterprise creating its own. There are open source and proprietary systems that can be run in-house or accessed through an external service provider. Some systems are better suited to some tasks, so there can be a degree of customization by merely picking the system to use. Also, it is within reach for an enterprise to tune or customize an existing system.

Riding on the infrastructure is one of the most valuable assets of the enterprise: its data. Some of the data will be from internal sources and some from external sources. The data covers both internal operations and external factors that affect the enterprise. The data may itself be a product of a GenAI system, or a GenAI system may consume some or all of it. GenAI can be used to sort, format, normalize, filter, and find patterns in data. Using the data are IT applications. In general, these applications work to turn data into information and knowledge for enterprise decision making. In fact, if the data is not used for decision making, nor required by regulators, some argue that money shouldn't be wasted on creating and storing it.

Surrounding the boxes in the illustration is a bubble labeled Security. This is intended to show that security interacts with all the others. It protects all the others. It is part of all the others and relies on all the others. For example, security tools can be part of the Infrastructure. They make use of the data, protect applications, and use automation. GenAI, in whichever domain it is present, needs cybersecurity protection. It can also be incorporated into the cybersecurity defensive tool set itself, but only where hallucination and other negative side effects don't cause uncontrollable problems.

Illustration 1 has one vertical box: Automation. It is shown as vertical because it touches and interacts with all three of the horizontal boxes. Automation can be used to improve the efficiency and reliability of the infrastructure. It can be used to create, organize, or distribute data. It can be used to help make decisions based on the data. GenAI can participate in automation. One promising application is the use of GenAI to create code used in automation systems.

## Risk Check List

Illustration 2 provides a check list that an executive can use with their team to decide whether a proposal being presented by outside partners or internal team members is ready for serious consideration. It first evaluates the risks, then asks about the benefits to the company.

**GenAI Executive Proposal Review Check List**

Risk/Reward	Considered	Not considered
Hallucination		
IP Leakage		
Social Engineering		
Fake ID		
Corrupted Data		
GenAI Created Cyber Attack		
Fit to domain		
Benefit to Company		
Adequacy of Training Data		
Handling of Edge Cases		
Sufficient H/W		

Illustration 2. GenAI Risk/Reward Check List

The risks unique to GenAI derive from GenAI's negative side effects. The first six items on the check list relate to these risks. For a more detailed discussion of the side effects see [The Dark Side of Generative AI: A Taxonomy of Negative Possibilities](#). By asking questions about these areas of concern the executive can better determine how well thought out and realistic a proposal is.

The next set of questions relate to the domains shown in Illustration 1. They probe how well the

proposers understand what they are trying to achieve and if they are doing it in the right domain.

Then comes questions on benefit. There are many stake holders in an enterprise. By asking how the proposal benefits the company, the executive can probe how well the proposers have considered the various affected stakeholders. This then leads to probing what the overall risk/reward ratio is.

Finally come questions about GenAI itself. A GenAI system is only as good as the data it is trained on. Thus, questions about the adequacy of the training data are very important. Related to this are questions about edge cases. Edge cases are the low probability ones that humans are good at dealing with. Some years ago, a Waymo executive explained edge cases with the following example: An autonomous vehicle encounters a semi-trailer painted with a picture, at scale, of a road with a stop sign. A human recognizes this as a picture. But an AI system may get confused. For GenAI systems, the question can come down to whether or not there have been sufficient instances of these edge cases in the training data. Finally, if all the preceding questions have good answers, and there is a good application with a good GenAI system, then the question of resources to run it arises. Is there enough processing power in the right place? Is there enough cooling?

The 11 questions in the illustration 2 check list is a good start. Executives may want to take it as a starting point, perhaps add to it based on their past experience, then update it as they develop and implement the AI innovation ecosystem described below.

## Developing an AI Innovation Ecosystem

There are three stages of technology evolution: Stage 1, denial; Stage 2, implementation of the old paradigm with the new technology; Stage 3, realization of the new paradigm with the new technology. With GenAI, we are currently in the transition from Stage 2 to Stage 3. It is difficult to predict how long a Stage 2 to 3 transition will take to complete. In the case of the PC it took a decade.

For GenAI, Stage 2 is the use of GenAI to enhance the browser function. Stage 3 is unclear. During this transition period there will be lots of good ideas about how best to take advantage of the new technology. Unfortunately, many of those good ideas will not pan out; it is therefore prudent to take a portfolio approach, i.e., to develop a portfolio of implementation initiatives that are focused on capturing benefits for the enterprise. Some of these initiatives will fail and some will succeed.

The successful leaders will implement an AI innovation ecosystem as shown below in Illustration 3, below. Such an innovation ecosystem recognizes that: 1) key expertise lies outside of the enterprise; 2) business dynamics are well understood internally within the enterprise; and 3) not all good ideas will pan out.

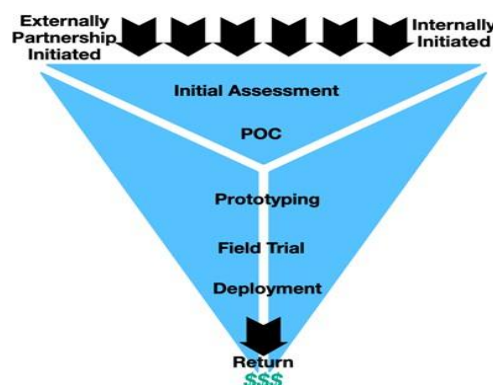


Illustration 3. AI Innovation Ecosystem

Innovation ecosystem leaders create a culture with organization structures, policies, and procedures that work like a funnel. They constantly bring in good ideas and assess them for technical feasibility, organization benefit, and risk, picking the best for early Proof of Concept (POC) work, then picking the

most promising POCs for further prototyping. They then assess the prototypes, pick the best prototypes for field trials, then assess the field trials, and finally pick the best field trials for full scale deployment. Once the GenAI Stage 3 paradigm becomes clear, the ecosystem funnel may be directed at other disruptive technologies.

From the leadership point of view, this kind of ecosystem befits organizations that communicate well and foster a culture that supports innovation. Establishing this culture is a key executive objective and is created by both direction and example. The result will be a whole organization in sync. Staff will be comfortable that they are not expected to know everything. Partnering with outside organizations and individuals who bring valuable knowledge and expertise but not diminish staff members. Everyone, including outside investors, funders, and partners, will understand that failure is part of the process. All will embrace that the whole purpose of the innovation ecosystem funnel is to provide a failure process that minimizes cost and maximizes potential benefits at each step.

## Conclusion

As an executive running an enterprise, trying to become an expert in AI technology is a daunting task. Ignoring AI technology, on the other hand, is a path to unfortunate outcomes. In a third alternative, executives who use the GenAI proposal check list to continuously fill the funnel of an innovation ecosystem will capture significant benefits while avoiding costly mistakes.