How to Set Up an AI Center of Excellence

Artificial intelligence is one of the most powerful technologies for reshaping business in decades. It has the ability to optimize many processes throughout organizations and is already the engine behind some of the world's most valuable platform businesses. In our view AI will become a permanent aspect of the business landscape and AI capabilities need to be sustainable over time in order to develop and support potential new business models and capabilities.

Specifically, we believe that companies need to establish dedicated organizational units to entrench AI. This is an important business tool that cannot be left to bottom-up whimsy. Companies are devoting considerable financial resources to AI, and necessary skills and experience are too rare to assume that they will be scattered around the organization with little coordination or collaboration. Just as e-commerce led to Chief Digital Officers and groups to support online presence and commerce, we believe that AI will engender new competence centers (CC) or centers of excellence (COE), and new roles within them.

The idea of establishing a CC or COE in AI is not particularly radical. In one recent survey of U.S. executives from large firms using AI, 37% said they had already established such an organization. Deutsche Bank, J.P. Morgan Chase, Pfizer, Procter & Gamble, Anthem, and Farmers Insurance are among the non-tech firms that have created centralized AI oversight groups.

Certain AI technologies are well known within many organizations. Machine learning derives its roots from statistical regression. This raises the issue of whether an AI CC or COE should be combined with analytics groups. If an existing analytics group is already doing some predictive analytics work, analysts who are willing to learn and grow can probably master many AI projects, and a combined organization would make sense.

What an AI Team Should Do

Whether an AI team is an outgrowth of an existing analytics team or an entirely new group, there are many different activities that it can and should pursue. Some of these — like developing AI models and systems, working closely with vendors, and building a technical infrastructure — can be done in collaboration with an IT organization; others will involve working closely with business leaders. Although collaboration is important, these are the tasks that the AI team should be responsible for:

Create a vision for AI in the company. It's important for executives to discuss — ideally with AI experts — what AI is, what it can do, and how it might enable new business models and strategies. Otherwise it may sub-optimize what AI can do for the business.

Identify business-driven use-cases. Developers of AI capabilities will need a prioritized list of applications or use cases within the company. They should balance strategic value with what is achievable. Companies may develop some of these use cases as pilots or prototypes, but they should also have a "pipeline" — regularly monitored by the AI center and by executives — that leads to production deployment.

Determine the appropriate level of ambition. Since AI typically supports tasks rather than entire jobs or business processes, it is usually best to undertake less ambitious projects as opposed to "moon shots." But in order to get management attention and have a substantial impact on the business, organizations may want to undertake a series of smaller projects in one area of the business. This may require a "road map" with multiple use cases across a timeline. An AI center can help a company "think big, but start small" with AI.

Create a target data architecture. The vision and use-cases define the data platform and tools needed to deliver. This is key for all (data-relevant) projects, to includes all types of data — structured, unstructured, and external. Hadoop is the standard data management platform today, but the AI center needs to decide between on-premises versus cloud variations, and self-maintained open source solutions versus licensed solutions (e.g. Hadoop on Cloudera or AWS or open-source). Most companies will benefit from using user-ready analytics tools with open-source components (e.g. Alteryx) to allow quick user-friendly modeling, rather than packaged tools that are historically BI-oriented (like early versions of SAS or SPSS).

Manage external innovation. An AI center can help to orchestrate relationships with universities, vendors, AI start-ups, and other sources of expertise and innovation. The company can develop an AI ecosystem, and perhaps even invest in firms that show promise of adding value to the business. This is also important for the tools and technology to be best-in-class.

Develop and maintain a network of AI champions. An AI center will work best if it cultivates a network of influential supporters and champions for the technology across the business. This step is far along in many companies; in the 2018 Deloitte survey, 45% of companies had appointed senior executives across the company as AI champions. Given the commodification of programming (with readily available scripts in languages like R- and Python), the focus for in-house capability building should be on statistical and mathematical modeling, rather than pure programming.

Spread success stories. A key success factor with AI or any new technology is to spread early success stories with prioritized use cases. This will build the appetite for more AI activity; in effect such communications perform a marketing function for the AI center.

Acquiring and Building Talent

One of the most critical factors in successfully building an AI center is recruiting, attracting, or building talent. It is no secret that leading-edge AI engineers and data scientists (statisticians) are difficult to hire—even in Silicon Valley. Most organizations will require a few people with the ability to develop and implement AI algorithms—say, a Ph.D. in AI or computer science. But many of the business-focused tasks of a center can be carried out by MBA-level analysts who have made themselves conversant with AI capabilities and who can use automated machine learning tools. It is also possible to get a faster start with AI talent by hiring consultants or vendors to work on early projects. It will be mandatory to combine them with internal employees on teams.

Companies may also want to start now in building AI talent. There is no reason why quantitatively-oriented employees can't be trained in AI. Some companies, including Cisco Systems, worked

with universities to develop data science training programs for internal employees that created hundreds of certified specialists. The same approach could be taken for AI (with some of the same content).

Also, companies like Reply and DataRobot and universities like MIT are offering short executive education courses to ensure "quick" ramp-up on AI related skills, tailor made for each company.

Organizational Structures and Processes

While there is no single best organizational structure for an AI center, we think that in most cases organizations would be well-served by a central structure with deployed or embedded staff, reporting to an enterprise-wide business function. Since AI talent is scarce, it is difficult to develop critical mass if it is scattered around the organization. And our experience with analytics functions was that centralization contributes to greater job satisfaction and retention for this type of role.

To avoid excessive bureaucracy, a centralized group should embed or assign its staff — at least some of them — to business units or functions where AI is expected to be common. That way the center staff can become familiar with the unit's business issues and problems, and develop relationships with key executives. Rotational programs across business units can improve knowledge growth and transfer. As AI starts to become pervasive, these embedded staff may move their primary organizational reporting line to business units or functions.

There are a variety of possible areas into which an AI center might report, but we'd argue that the best one is a central strategy group that is also responsible for digital tasks. ProSiebenSat.1 (the largest private media company in Germany) positioned the data analytics team between digital business and IT to allow for a stronger focus on developing new business models for the platform economy. The AI and Analytics teams at Versicherungskammer (the largest public insurer in Germany) report to the Chief Information Officer. Procter & Gamble's AI group was a joint effort of IT and R&D. At Anthem, the Cognitive (AI) Center of Excellence reports to the Chief Digital Officer.

As with many technologies today, AI projects are best conducted in an "agile" fashion, with many short-term deliverables and frequent meetings with stakeholders. If there needs to be substantial system development or integration, more traditional project management approaches may come into play.

Finally, given some of the ethical issues that can arise from AI, it's important not to ignore that set of issues within an AI center. Companies may want to establish ethics-related positions or review boards as a part of their AI efforts. Microsoft, for example, has created an "AI Ethicist" role to guide businesses on such issues as algorithmic bias and the impact on consumers of AI applications.

All business resources require focus and alignment to succeed. The scarcity of AI talent and expertise means that it is even more critical than with other resource types to create critical mass for AI within a corporate center of competence or excellence. We believe it is virtually impossible

to succeed as an “AI first” organization without a center devoted to the effective application of that technology.