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Taking Data Product Development to the Next Stage

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The Big Data era keeps on rolling, and it increasingly enables organizations to provide value to the marketplace through the creation of data products. Once the province of online firms in Silicon Valley, now traditional firms like GE, Monsanto Co., and large financial services companies are beginning to build products and services that leverage robust data resources and analytics. The latter range from basic reports and visualization to more sophisticated predictive modeling and recommendations. As intriguing as this innovative initiative may be, data products have some specialized characteristics that are challenging for traditional firms' processes and business models. To address this dilemma, we've been investigating whether there is an ideal product development approach for data products. We're still searching, but there are some emerging signals about the ideal approach.

Most companies—even in Silicon Valley—don't have a well-defined process for producing data products. Both traditional product development and hardware and software product development are much more likely to have methodologies, defined stages, product development managers, and so forth. Further, since most companies haven't used data products to generate revenue directly, there hasn't been a clear focus on their value relative to the cost of development.

Since data products are often an ancillary offering—a different type of product than the goods and services it previously provided—it may be difficult for a traditional company to get the requisite organizational support to build and launch one. We have also noticed that data products come from a variety of functions and units within companies. At one online firm, for example, there was a defined Data Products group, but many of the company's successful data products were actually developed elsewhere within the organization. Add to this the potential complexity of rolling out these products: does the organization provide static reports, interactive platforms where users can change report criteria, or customized information or recommendations according to particular customers' needs.

As a result of these challenges, companies would probably benefit from a more structured approach that engages the stakeholders of data product creators, directly considers

incremental value, and creates the best possible products. But in a meeting of a group of companies exploring a new program called the Data Economy Institute last fall, several experienced data product developers found the idea of using traditional product development methodologies somewhat ludicrous. “Way too slow for what we need,” one financial services company’s representative said. At Monsanto, which acquired The Climate Corporation, a Silicon Valley-based startup with data products involving highly detailed weather data and analysis, an executive commented that, “Their cycle times were a lot faster than ours, and they iterate more frequently. It’s one of the reasons we bought them.” It seems unlikely that traditional approaches to product development will be sufficiently fast and iterative for data products.

There are a lot of alternative product development methodologies that might apply more directly to data products. One of the more recent ones is the “lean startup” approach, created primarily by Eric Ries. Intuit Inc., for example, has embraced both the lean startup idea (see a series of short videos on it here) and data products, and is beginning to combine the two ideas. The company has a strong focus on experimentation and rapid data-gathering. Intuit has had some successes, but it’s probably too early to declare victory on “lean startup for data products.” However, many of the components of lean startup approaches would fit well with the fast-moving data products lifecycle.

About a decade ago, Mark Meyer and Mike Zack of Northeastern University published what we think was an excellent and before-its-time article in MIT Sloan Management Review called “The Design and Development of Information Products.” That article contained some useful ideas about developing today’s data products, including the creation of a “data refinery” capability, creating “platforms” (capabilities for creating multiple data products) rather than individual offerings, and other ways to add value to information.

If we were designing a new data product development methodology, we’d also add some approaches used by Google Inc. They pioneered the “users first, monetization later” strategy, and it has obviously worked pretty well for them. User-centered design is another Google product development approach that has performed well over the company’s history. One of the keys to reducing the cycle time of data product creation may involve the integration of those technologies that are facilitating the creation of new data resources behind these products. Online technologies can provide a platform that helps data product providers to be more in tune to the needs of information consumers on an ongoing basis, which can reduce development time considerably.

We would also like to include some approach to communicating effectively with stakeholders for a data product. Those might include managers of complementary existing products or services, someone from the legal department (who may have to address data ownership and use issues), the IT organization, marketing and sales, and HR, who might have to hire and retain some new people. As a result of all these cross-functional interactions, it may be very useful to have a product manager to coordinate them all. More "agile" methods (involving frequent, short-cycle deliverables) make it feasible to show interim deliverables to stakeholders and keep them involved.

We're not sure there is an already-developed product development approach that includes everything needed for effective creation of data- and analytics-based offerings. And it may even be impossible to throw all those things in and still have a lean, rapid approach. But it will be fun to watch the processes by which more and more companies develop data products and introduce them into the marketplace.

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