Charting the Course of Innovation: A Startup Analysis

What new technologies are affecting BI professionals, and how can we be prepared for these changes and the innovations they bring?

From Big Data to mobile BI, technologies that affect BI professionals are changing rapidly. Innovation is the subject of the opening keynote at the TDWI World Conference in Chicago on May 7. We discussed the subject with the keynote speaker, Shawn Rogers, to understand what BI trends are the most important and how they'll bring innovation to our work.

BI This Week: Why is it more important than ever to plan for the future with regards to our BI/DW environments?

Shawn Rogers: In the all my years in this industry, I don't believe I have ever seen such dramatic change in technology and culture surrounding business intelligence ecosystems. New analytic opportunities have forced IT and business practitioners to stop and appraise where their strategy is heading and how best to address the inevitable challenges that accompany these new opportunities.

In past years, the enterprise data warehouse (EDW) was the focal point of our business intelligence and data warehouse strategy. Most companies built and maintained an architecture that serviced the reporting and early analytic needs of their end users. Many companies experienced early growing pains with architectures or solutions that wouldn't scale, but overall data warehousing technology did a fine job meeting most workloads that were required.

Today, the demands of a maturing user base have stretched EDW architectures beyond their limits and have forced a paradigm shift away from the central EDW as the primary data structure to an environment that is driven by the practical approach of matching data and workloads to the best possible platforms to meet the analytic needs of the users or data consuming applications.

This shift has opened the door for analytic database and appliance technology, Big Data, mobile platforms, and cloud technology. Each of these has found a home along side the EDW in our data management landscape, offering new ways to solve problems but adding new challenges to managing what was once a highly

focused environment. It's critical for business intelligence and data warehouse professionals to research these new opportunities, understand how and where they might fit into their specific data landscape, and implement what will add the greatest value to their business.

How are these new technologies driving change in our BI and data management landscape?

Most companies have already created an environment that delivers analytic capabilities. Their systems span data acquisition, data management, business analytics, knowledge delivery, and actionable intelligence.

Each new technology requires a plan for change across many of these disciplines. For instance, adding cloud based technology to a BI environment may have an immediate positive impact on speed to implementation, upfront capital expenditures, and (in some cases) overall project adoption. At the same time a strategy for data acquisition/integration will need to be implemented with special attention to details surrounding security, governance, and regulatory issues.

Traditional data management tools are not necessarily suited for cloud interaction, and managing relationships with cloud vendors will demand a new skill set from IT management personal responsible for running these projects. In each case, as new technology is adopted that will impact the five major areas of business intelligence and each will need a strategy for success.

How are these new technologies driving change in our BI and data management landscape?

There are several that are important. Cloud, Big Data, mobile, and analytic platforms all offer significant impact to companies who adopt the technology. Working closely with end users will help to identify which of these will deliver the largest value for your specific circumstances.

In some cases, these new platforms will merge to deliver hybrid solutions that combine technologies. Big Data analytics supported by cloud infrastructures are a good example of data and workload finding the best possible platforms to meet specific use scenarios. Companies who embrace adding new platforms to their data management environments will benefit the most.

Big Data may deliver the highest innovation impact. Adoption is still early, but the ability to leverage data in high volume, at high velocity, from a variety of sources and structures is a compelling recipe for complex analytic innovation.

Big Data isn't necessarily a new technology, but advances in computing power and reduced adoption costs have allowed companies to add it to their data line up. Early Big Data projects were done with super-computing platforms and were so expensive they generally required federal grants to operate. Today, Big Data analytics is executed on commodity hardware and often uses open source software as a foundation. Hadoop is a leading software framework for Big Data and offers many answers to the challenge, but Big Data can also be found in traditional RDBMS systems and analytic platforms. This is an excellent example of why it's critical to strategically add these platforms to you your existing environments so you can bring all your tools to bear on these problems and leverage the best platforms for the task at hand.

Can you share a Big Data use case example that illustrates innovation?

Supply chain analytics has long been a complex model-driven challenge for companies looking to save money through smarter inventory management. Big Data has opened new horizons for these companies. Introducing social data into the process can add great value to decisions but the volume, velocity, and variety of data from the social sphere can overwhelm most traditional systems.

Retailers are listening to the social signal and analyzing the data flow in Hadoop to determine social sentiment and purchasing indicators. By combining this data with customer information, historical store sales, and current sales, a

company can gain excellent insight into how best to stock stores. They're taking another step forward in the process by integrating these results with product-based RFID and geolocation data that allows companies to take action and apply the sights to the supply chain process while it's in motion.

This use case is an excellent example of how an expanded data ecosystem can be leveraged to execute sophisticated and complex business analysis. The platforms involved in this scenario include operational systems, EDW data, supply chain application data, and social analysis from Hadoop. The final analytics were executed on an analytic platform and resulted in significant savings for the retailer.

What is primary takeaway for innovation in business intelligence?

By accepting that our once EDW centric world is quickly expanding and identifying the best of the new technologies to add to our environment, a company is building a foundation for innovation. Remember to be selective and allow your users to drive the overall direction for new technology adoption. As you address these new opportunities, remember to plan for how it will affect each area of your BI abilities.

Charting a Course to an Innovative Culture Within Your Company

Flashes of insight, strokes of genius, and sudden bolts of inspiration often spring to mind when we envision the practice of delivering game-changing business advancements. But while ideation is a critical component of building an innovative culture, by itself it's not enough to drive transformative breakthroughs for today's enterprise, given the speed, scale and level of complexity at which the commercial world now operates. Rather, as Harvard professor Gary P. Pisano notes, modern organizations need to adopt a well-planned innovation strategy: a set of systemized actions, behaviors, policies and procedures that work toward achieving a specific competitive goal and lay the groundwork for ongoing corporate evolution and advancement.

In other words, if you want to achieve breakthrough results in business, it's not simply enough to "Think different," as Apple co-founder Steve Jobs famously

challenged the world to do. You've also got to implement forward-thinking and systemic changes to create an innovative culture and mindset.

And you have to put in place actionable methodologies that can help you proactively disrupt your organization and its core offerings before competitors, unforeseen events or unexpected market shifts invariably force your hand.

An overly myopic focus on delivering today's most in-demand solutions may come at the expense of your ability to deliver tomorrow's winners. Focusing purely on short-term gains and failing to set aside the time and resources needed to make long-term investments in your firm's future in a rapidly changing business world may prove a costlier choice for your organization.

However, risks need to come in the form of smart and cost-effective bets that lay the groundwork for future success. That means institutionalizing formal innovation and R&D processes across your enterprise, encouraging workers to think like intrapreneurs (entrepreneurs within the organization), and committing to a mindset of continuous learning and organizational improvement.

It also means investing in two forms of growth-minded initiatives: Core innovations (the kind that reestablishes the uniqueness or relevancy of your core products and/or solutions) and leap innovations (the kind that delivers transformative breakthroughs).

Planning for Tomorrow:

Instituting future-focused mindsets and processes in your organization is critical to laying the groundwork for an innovative culture that leads to game-changing innovation, says Cuong H. Duong, CEO of global microconnector and RFID antenna manufacturing leader Linxens. "For innovation to happen, basic building blocks have to be in place," he says. "It's crucial to streamline time-consuming processes and activities that are currently eating up your firm's schedule to free up more of staffers' time to concentrate on brainstorming and

developing forward-looking advancements and ideas. If you can't move fast, you can't innovate."

Mr. Duong suggests that one of the first, best investments an enterprise can make is automating routine processes from accounting to data and order entries and customer relationship management (CRM) functions. Offloading time-consuming tasks can free up more time to think about where your industry and organization should be heading rather than just focusing on meeting today's needs. Mind you, "These systems can take a couple of years to put in place," Mr. Duong says. "But does it change the game because [your company's gains] become exponential at some point in time."

Like many firms, Linxens has been faced with challenges due to the onset of the global pandemic, supply chain disruption and sudden shifts in customer preference, all while growing from 700 to more than 3,200 employees. But by making a point of decentralizing operations and decision-making processes as it grew, Linxens has been able to become faster and nimbler about responding to rapid changes in the marketplace.

Equally important, Mr. Duong says, is driving an organization-wide innovative culture, in which innovation and creativity are valued at the highest executive level. "Innovation is nothing more or less than people being more at ease with brainstorming and generating ideas and trying something new," Mr. Duong says.

Under Mr. Duong, Linxens has laid the groundwork for future innovations in myriad ways. The company has moved away from a linear process of research and development to a model that focuses on running multiple pilot projects in parallel, using these test programs to grow capabilities, boost insights, quickly source partner/market feedback, and adapt its business strategies.

The company moves fast and fails fast, exploring different opportunities, market tactics and ways of thinking on a regular basis. "This gets you in the mood where no matter what happens in the market, you're already more agile and proactive and less mentally fragile," says Mr. Duong.

IN THE FAST-MOVING world of technology innovation, entrepreneurial opportunities emerge continually. But simply having a good idea does not guarantee that you'll successfully launch your start-up, and moving from the concept to execution stages requires travel over some pretty rough territory.

Fortunately, lessons learned by IT colleagues who have become experienced entrepreneurs can help you make sense of the journey, whether you're a technology savant developing cutting-edge software or a savvy businessperson building an e- business services operation from the ground up.

Starting a new company and developing fledgling technology requires the clearest of visions. Often, technologists get so preoccupied by what and how they are creating that they lose sight of who is going to use it and what real-world problems it will solve. On the flip side, visionaries can get so entranced by how a technology will change the face of business that they oversell the product before it's been developed or has even passed a proof-of-concept test. Knowing what product or service you're developing, the market it serves, how to build it, and how to charge for it are key to moving forward with a promising concept.

"The first thing an entrepreneur needs to do is clearly think about what the venture's basic purpose is ... the pain you're trying [to] eliminate," says Dr. Marco Iansiti, who teaches a course called Starting New Ventures at Harvard Business School (HBS), in Boston. "I think one of the mistakes that people make is that they don't spend a lot of time thinking about that."

Fuzzy thinking is endemic in the technology industry, where the boundaries of what's possible are constantly shifting. The difference is that established companies can squander resources chasing ill-defined goals; a start-up gets only one shot at making a viable product to serve its target market.

Rob Rosen, CEO at EventZero, an IT services provider for start-up companies, in Boston, learned about practical applicability the hard way. Before he co-founded EventZero in 1998, Rosen started a business called Vertigo to develop a tool to build personalized multimedia applications for finance, planning, and

management. Although Vertigo did generate revenue during its 7-year life span, Rosen and his partners chalked the endeavor up as unsuccessful: Vertigo had developed a product without first determining whether a need for the tool existed.

"In the end, ultimately, people didn't see it as having a lot of value," Rosen says. **"We really thought it was a neat technology and we could imagine a lot of things it could do to help people. We never spent a lot of time asking people if it helped them solve problems."**

Determined not to make the same mistake twice, Rosen made sure that EventZero addressed a persistent problem in a specific market. He found a huge demand for his IT planning and design advisory services among companies deploying e-commerce Web sites. So Rosen tailored EventZeroo to serve funded e-commerce start-ups and formed partnerships with venture capitalists to network into his target client base.