Data Science is the New Accounting

By Hannah Mayer, Jin Paik, and Jenny Hoffman
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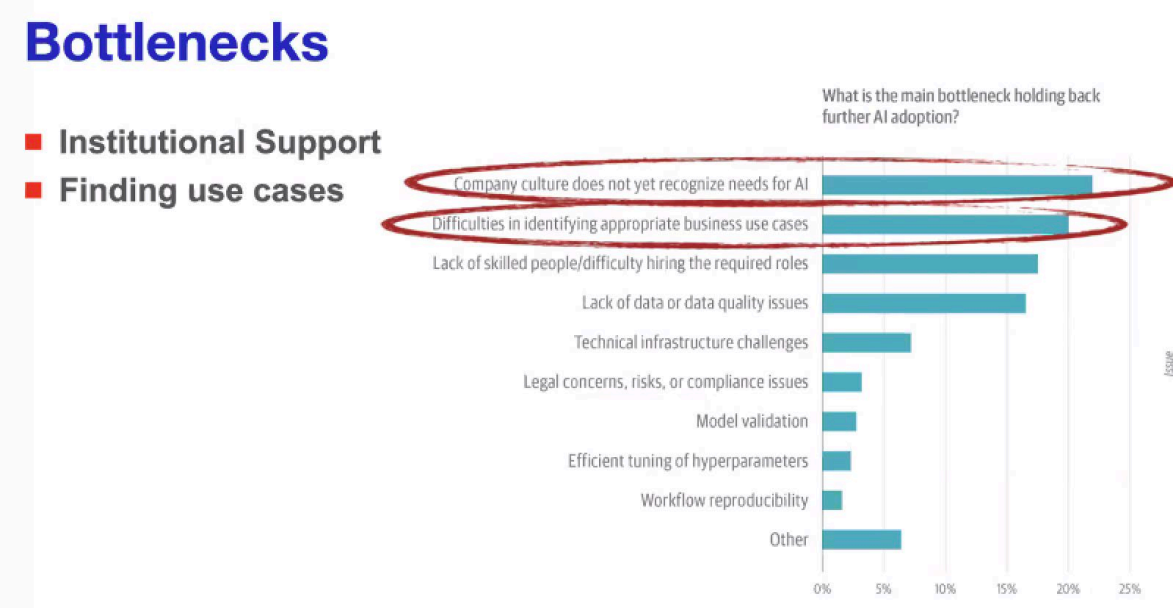
"Most business people don't want to become accountants but we have to teach them the basics of bookkeeping anyways. It's the same with data science now – you may not want to become a data scientist, but you will need to understand data science if you want to be an effective business leader," reasoned Harvard Business School Professor Karim Lakhani at the most recent installment of *AI in Enterprise* series hosted by the Laboratory for Innovation Science at Harvard. Roger Magoulas, the session's guest speaker shares Lakhani's view that data science can be an enabler for better business decisions and consumer products. But Magoulas warned, "It sounds easy only until you get into it. AI is non-deterministic – you don't know whether it's going to make things better. And it will take you a lot of time and effort to find out."

Magoulas would know: he has worked on data analytics projects for three decades, designing and implementing data infrastructure and analytics platforms for a number of organizations, including Columbia Pictures, Alberta Motor Club and the San Francisco Opera. Until recently, he served as the director of market research at O'Reilly Media, where he ran a team that built open source analysis infrastructure and provided analysis services to leading decision makers. Now he volunteers for California's COVID Insights task force, providing guidance to the governor's office, assists on Public Resource's Big Box of Science Project, and advises several startups. in During his conversation with Lakhani, he delved into key insights and learnings from the AI Adoption in the Enterprise 2020 survey report he wrote while he was with O'Reilly's Radar.

1. New models for a new COVID-19 era

Firms are reinventing AI deployment based on the current needs. According to one survey, one of the most interesting insights revealed was that 85% of respondent organizations are evaluating AI or using it in production. Only 15% are not doing anything with AI at all - down from 19% the year prior. "COVID-19 has contributed to AI adoption in interesting ways as well," Magoulas explained. "Lots of models stopped working in April because they could not make sense of the new behaviors. So organizations started to go back to models that were used in the 1950s, hoping that these could make better predictions and make up for the lost saliency and accuracy of previous models," he noted. The bottom line: No matter which models are employed the pandemic has certainly contributed to the increasing maturity levels of AI.



Source: Roger Magoulas

2. AI is not just reserved for the R&D and IT functions

AI projects will continually involve heavy usage from R&D and IT groups, but verticals are catching up. Think customer service, marketing and advertising, and manufacturing. AI is permeating organizational functions more and more. Additionally, different types of AI are becoming more important. Given the “wide applications across industries and corporate functions” Magoulas believes that “the new frontier is natural language processing.”

3. When it comes to data science expertise, double down

While data engineering, which is time consuming, is still a necessary prerequisite for many organizations, it is trending downwards in importance. Meanwhile data science, AI, and ML are picking up speed and quickly moving into the spotlight. So the race for finding the right talent continues. Firms should be wary about only hiring a single person to do the job. While they possess the right skills and the brilliant mind, when it comes to data science, variety trumps. “Never hire one single data scientist. Diversity of thought leads to better algorithms. Two data scientists produce drastically better results than a lone warrior,” Magoulas illustrated.

4. Right Tool for the right situation

Finding the available skills can be a challenge, but that has not been primary impediment to AI adoption in most organizations. Instead, it is a lack of institutional support, including company cultures that are dismissive of the potential of AI. Organizational difficulties in identifying appropriate use cases for AI compound the problem. Magoulas warned, “Companies need to start at the bottom of the data ladder, and not rush to adopt neural networks right away. Finding the right tool to use for the right situation, and only applying it when it really makes sense, goes a long way in ensuring AI adoption success.”

5. Perceived risks associated with AI adoption

Three of most commonly mentioned risks that AI model building and deployment pose are fairness, bias and ethics were among. This echoed Harvard Professor Latanya Sweeney's observations from her *AI in the Enterprise* conversation with Lakhani in September. A perceived and proven lack of fairness built into algorithms represents a threat to AI adoption. Compounding these are concerns related to interpretability, transparency and – again – the non-deterministic nature of AI and its resulting unexpected outcomes. However, as so many things in life, even when you cannot control the outcome, AI deployments are worth pursuing. Or as Magoulas put it, "It's important to understand and address these risks. But to not pursue AI because of them would be the wrong take-away. Any organization should look into how AI can benefit them. It may be a difficult road, but getting left behind isn't an option." Data science is, after all, the new accounting – it may not be easy or popular, but you cannot get around it.

Link to *AI in Enterprise* Podcast & Video:
https://innovationscienceguide.org/resources/ai-in-enterprise-podcast-episode-2-peter-skomoroch-data-wrangling-linkedin