

“The Easiest Way to Solve a Problem Is to Have Seen It Before”

–AI Product Management

By Hannah Mayer, Jin Paik, Jenny Hoffman, and Steven Randazzo
July 21, 2020

The reinvention of the wheel is a poor idea in many contexts, especially when building artificial intelligence (AI) products. As an entrepreneur, investor and former Head of Data Products at LinkedIn and Workday, Peter Skomoroch advocates adopting a portfolio approach for developing AI-powered products. Similar to how a venture capital fund or a private equity firm would make investments, a balanced approach comprised of some risky bets and many more proven strategies is the winning ticket for using AI to build products. As part of the [AI in Enterprise series](#) hosted by the [Laboratory for Innovation Science at Harvard](#) and HBS Professor Karim Lakhani, Skomoroch shared his experience on what makes AI product management distinct from more commonplace forms of product management, and how to avoid typical pitfalls, while maximizing success.

“The easiest way to solve a problem is to have seen it before,” Skomoroch argues, referring to the established best practice of replicating what other companies have successfully done in the AI space and adapt it to an individual organization’s purposes. While doing groundbreaking work and building completely new algorithms from scratch is laudable, pursuing such risky ventures should only consume between 10 and 20% of resources.

Several other principles should guide AI product management:

1. **Put company strategy and goals first.** Whether risky road or beaten path, AI product development roadmaps must always start with the company mission and strategy, prioritizing what matters to the business. Aligning projects with company goals (e.g., even specific quarterly objectives) and prioritizing projects by ROI may run counter to what some may want. “You must not pursue the latest, shiny thing, but instead focus on what will have the most impact,” Skomoroch emphasizes. “Deepfakes [synthetic media in which a person in an existing video is replaced with someone else’s likeness] may be interesting and trendy but unless they add real value to your business, it should be a clear hands-off case,” he continues. This very mantra guided Skomoroch’s work at LinkedIn, where he created Skills and Endorsements, one of the fastest growing new product features in LinkedIn’s history, generating 3 billion endorsements for more than 70 million members in the first year after launch. Directly connected to LinkedIn’s mission of connecting the world’s professionals to make them more productive and successful, he developed an ML system to recommend skills a members should add to their profile, driving conversion rates near the 50% mark.

2. **Break into the virtuous cycle of more data-better algorithms-better products-more data.** Getting the [data flywheel](#) moving is the key to better AI. “Underneath the hood of the Amazons, Googles and Netflixes of this world sits data. More data helps build better products. That’s why these companies excel at what they do – they have the requisite data volumes to build great products,” Skomoroch argues. In his book [Competing in the Age of AI](#), Lakhani describes this as a virtuous cycle in the concept of the AI factory, whereby more data leads to better algorithms leads to better products leads to more data. If firms are to take full advantage of the potential that AI bears for their business, they will need a good starting strategy here. Most non-digitally native companies should focus on collecting and collating data that can be useful for them.
3. **Be smart about if, when and how to pursue AI/ML product development.** ML software development is fundamentally different than traditional software development and due to complexity and difficulty should not be pursued by everyone without fully understanding the risks. Enormous amounts of labelled training data are required; it’s unclear which models will pan out; past model runs are difficult to reproduce; progress is often episodic, with unpredictable starts and stops; many research systems are still held together with duct tape (infamously, LinkedIn’s first job matching solution ran off someone’s desk). Skomoroch explains, “Not all companies should pursue this. Many need to start small, with tweaks to their waterfall development process, before advancing further. Others need to wait altogether. Again others are better off outsourcing.” And Lakhani agrees, “Do your plumbing first, or you won’t be able to take advantage of AI at scale.”
4. **Be clear on what AI is, and what it isn’t.** “To me, AI products are automated systems that collect and learn from data to make user facing decisions with machine learning,” Skomoroch illustrates. Lakhani points out, “The key point here is the automation of data collection and learning. Otherwise, it would just be a statistical model. This means incumbent firms need to build an automated data collection infrastructure, or else they end up in *dashboard land*.” The generous use of the term AI is often quite far-fetched from its real applicability: “using AI” is often confounded with “guiding an executive’s decision with data”. In reality, it refers only to automated systems that interact with customers, like spam detection products or Netflix’ movie recommendation engine.
5. **Move to a probabilistic view of the world (especially for AI Product Managers).** ML shifts engineering from a deterministic process to a probabilistic one, where taking intelligent risks is key. Companies driven by analytics and experimental insights are most likely to succeed with the most successful ML products as experiments at scale. Or as Jeff Bezos put it, “If you only do things when you know the answer in advance, your company goes away.” Having this mindset is a challenge because most Product Managers, Skomoroch thinks, are fundamentally risk averse and conservative. However, sometimes you just have to be brave, and accepting of failures. The portfolio approach relieves some pressure: not only is it a helpful guide in smartly diversifying risk across AI projects, but it is a tool to help Product Managers in accepting that some bets will fall through, or have to be killed. But what looms for the successful ones is greatness.

Link to Podcast & Video:

<https://innovationscienceguide.org/resources/ai-in-enterprise-podcast-episode-2-peter-skomoroch-data-wrangling-linkedin>