

Cybersecurity at MIT Sloan

Designing Cybersecurity into Digital Offerings

Cybersecurity at MIT Sloan brings thought leaders from industry, academia, and government together with MIT faculty, researchers, and students to address strategy, management, governance, and organization of cybersecurity of critical infrastructure using an interdisciplinary approach.

Cybersecurity is Lower Priority than Product Features

This project studied how product development teams build cybersecurity into their offerings and what mechanisms have been developed to promote such behaviors within the product design teams. Managers, product developers, and cyber experts who assist in product development were interviewed and shared how their offering design process worked. They highlighted that while cybersecurity is important, it's less important than other design criteria. "If a product doesn't have the right features, it doesn't matter how secure it is," one manager explained. Three mindsets get in the way of incorporating cybersecurity into product design.

"Without cybersecurity as part of the design early on, it is very likely that we would have those basic fundamental cybersecurity problems in the early version of the product."

Mindsets that block cybersecurity inclusion at product design stage

Mindset #1: Cybersecurity Does not Directly Contribute to Revenue	Customers expect cybersecurity within digital products, but ultimately pay for product features and solutions that add value, reduce costs, or provide competitive advantages. They don't see security contributing to these.
Mindset #2: Cybersecurity can Hinder Time to Market	Taking time to make sure the offering is secure adds to the time to market. If an offering cannot make it to market quickly enough, it loses to competitors. We should only implement the minimal cybersecurity requirements necessary to get the offering out of the door.
Mindset #3: Lack of cybersecurity within offerings has limited impact	Since the chances that a vulnerability will be exploited are low, we have time to fix cyber issues later. We will keep track of vulnerabilities we identify and fix them in the next release of the offering.

Building a Culture of Baking-In Security

Managers can take action now to change the mindset of the development team. For example, leaders can set an example with their words and make cybersecurity a priority by talking about its importance. Performance evaluation systems can include evaluation and rewards for cybersecure designs. Manager can offer consistent training and awareness campaigns of the importance of creating cybersecure offerings. These and many other mechanisms reinforce the organizational goal building secure offering. Leaders can start by creating a mindset of cybersecurity that encourages developers to bake-in cybersecurity from the beginning of their product development processes.

IMPACT: This research highlights how building a culture of cybersecurity for product and service development teams can impact how offerings are designed with security in mind. Customers expect secure products but this research highlights how that message may not be reaching product developers.

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