Section 2: Week 4: Mobile and Business

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# Mobile Devices and Business

It is a commonplace to see mobile devices making an appearance from the lowly doorman to the top executives of businesses. They enable every member within the organization to always be connected and gain insight into its ever-changing dynamics. It is easy to forget how much progress has been made integrating mobile into business, just in a couple of decades.

When Apple released the iPhone in 2006, the concepts became mainstream, and they successfully monetized the momentum into the 2011 release of the iPad. Numerous case studies were published shortly afterward, describing the improvements to employee satisfaction.

## Los Angeles Unified School District

A great example can be seen with the Los Angeles Unified School District (LAUSD), as they launched a one-billion-dollar program to provide 600,000 students with iPads (Tynan-Wood, 2016). The ambitious plan experienced technical, procedural, and political complexities. Due to the program rolling out everywhere at once, several teachers did not have a strategy to align the lesson plans with the technology. Other schools report network outages caused an increase in required bandwidth and related infrastructure. It did not help that some interviewed students expressed more interest in surfing the web than doing their homework.

The leadership team of LAUSD received criticism for these issues; however, that is not to say the program was wrong. Through a series of risk mitigation steps such as (1) reducing the blast radius; (2) providing teacher training and support staff; and (3) capacity planning across secondary systems—they could have improved the overall success of implementation (Hitt, Ireland, & Hoskisson, 2015). There would have been fewer missteps, and the program would be a model for every other school district copied.

Well-funded universities also experience these missteps as the complexities are not unique to LAUSD (Rahim & Singh, 2007). Rahim and Singh detail the evolution of similar programs in Australia, and how proper planning and consolidation normalized systems. They highlight (1) change management; (2) integrating existing web portals; (3) lack of technical expertise; and (4) consultant’s problems. However, it worth noting these universities reported the same problems nearly nine years before the LAUSD program.

## Does the iPad Add Value to the Business Environment?

Other studies have focused on smaller-scale implementations that encompass dedicated office locations (Hess & Jung, 2012). Hess and Jung measured the impact caused by providing twelve staff members with iPads. They reported that (1) response times decreased; (2) joy of use increased; and, (3) more notes were recorded. However, the staff experienced issues around (1) app user experience; (2) data entry (no keyboard) scenarios; and (3) some websites were difficult to navigate.

Additional thoughts and considerations are required to address knowledge gaps in both use cases. Consider the small study that suggested iPads improved note-taking during meetings. Was this because of (a) that specific technology or (b) merely a change in the process? A control group should be given paper and pen to determine. Similar, what value did those notes provide the group? If they are never consulted or shared, then perhaps an auto transcription service is a better solution.

## Improving Case Study Measurements

The LAUSD case study relies on anecdotal evidence and not empirical facts. The district administrators control both the device configuration and network infrastructure. They could collect telemetry around both the duration and the types of websites student are visiting. It would also be possible to collect *availability* metrics for each networking device. These data points would paint a picture of the holistic state of the program.

The LAUSD dataset contains every student in Las Angeles – a diverse metropolitan area. While they had the data, it was not efficiently leveraged. If an anonymized version of their student’s usage patterns became available, it could lead enable additional insights. Though, there could be regulations that limit third-party analysis from gaining a copy of that data. Family Education Rights & Privacy Act (FERPA), Children’s Online Privacy Protection Act (COPPA), and Children’s Internet Protection Act (CIPA) are three federal requirements that seeks to police cyber danger to minors (Poggi, 2019).

Hess and Jung performed their analysis over twelve individuals that are nearly all males, between 25 to 35 years of age, with professional degrees. The paper has far too much selection bias to be reused in another context.

## Expanding on the Experiments

Hess and Jung’s experiment revolved around handing out hardware and then recording the action durations on the device. They aggregated the results and performed various descriptive statistics on the data set. There was also a longitudinal effect as the organization had internal reshufflings and wasn’t very well defined. It is not inconceivable that the German Ministry of Education gave these students grant money and they squandered it.

Instead the research needed clearly defined scenarios and expectations of how the devices would be used. Automation should have also been created upfront to collect those measurements and centrally report them. The measurement periods were also too long and needed be broken down into user scenario episodes. This would enable a decoupling of the longevity of staff from the long-haul research.

Consider the efforts in Malaysian foreign language classrooms, where the course sizes were comparable to Hess and Jung’s study. Gabarre et al. started with a concrete lesson plan and strategies for involving the iPad. Students were given quizzes through the device and asked to use it for studying. The teachers collected formal and informal data points across their learners and control group.

While Gabarre et al.’s results are the same and Hess and Jung, they can be used in a more general manner. The foreign language students reported the same general preferences toward the iPad as it’s a sleek lightweight device versus slow and bulky laptops.