Project 1: Business-Driven IT Decisions and Investments

I.   <u>Introduction</u>

Though he's an IT expert, William Ulrich doesn't want to hear specifics about your IT system – or at least, not at first. First, he just wants to hear about your business. He wants you to "zoom back" so he can understand your vision for your business' future state, strategic objectives, and the demands placed on your business to remain competitive in the current environment. Only once he's talked to your people and deeply understands your business will he be ready to discuss all of the facets and specifics of your technology.

Mr. Ulrich began his career in the late seventies and eighties as a programmer analyst and contract consultant on IBM mainframe computers. As a consultant, director, and lecturer, Mr. Ulrich specializes in business architecture and business-IT transformation and alignment and is the Co-founder and President of TSG, Inc., President and Co-founder of the Business Architecture Guild, Co-chair of the OMG Architecture-Driven Modernization Task Force, Partner of Business Architecture Associates, and a Cutter Consortium Fellow. Although Mr. Ulrich works with a variety of clients, from large, established multinationals to US government agencies, the issues he sees in practice are remarkably similar.

As a consultant, Mr. Ulrich understands the "bleak picture" (his words) of IT/IS projects all too well; more than three out of five IT projects fail and Phil Simon (a technology expert who some have labeled a cynic), believes that it is "irresponsible and misleading to pretend that IT projects tend to go well" (Berkun). Mr. Ulrich identifies the silo effect - which "refers to a lack of communication and common goals between departments in an organization" (Vatanpour, et.al.) – as one of the key issues that can impact IT/IS identification, selection, and adoption decisions. Shifting from silo-based IT decision-making and budgeting to horizontal models

unencumbered by narrow business perspectives is rife with roadblocks, requiring specific critical success factors to be in place.

II. Roadblocks of Silo-Based Budgeting and Decision-Making

Silo-based budgeting can be a major stumbling block for effective IS/IT project selection; as described by Mr. Ulrich, company budgeting processes have a significant impact on which IS/IT projects are identified and adopted. He describes two common approaches to IS/IT budgeting at companies: 1) IS/IT projects are submitted centrally, but budgeting decisions are made based on which divisions have resources available or 2) divisions have IS/IT budgets they control to make independent decisions for IS/IT spending.[1] One of the downsides, per Mr. Ulrich, is that under a silo-based system, "one individual's desires" are more likely to drive the selection or adoption of specific technologies than business objectives. For example, individual directors might tell Mr. Ulrich that their IT objective is to "upgrade SAP," but once he probes into their motivation to do so, it becomes clear that there are no associated business objectives or key performance indicators.

In addition to the budgeting roadblock, silo-based decision-making results in a lack of coordination. As described in a 2016 article, "[t]o effectively fulfill organizational objectives, organizational members need to coordinate their activities, and, today, software tools usually support this coordination" (Taxén & Riedl, 6). Taxén and Riedl find that "coordination is an important but not sufficiently researched domain in the IS discipline and that it holds great potential to explain why some IS initiatives (e.g., ERP [enterprise resource planning] projects) and IT artifacts (e.g., GUI [graphical user interface]) are successful but others not" (30). As described by Mr. Ulrich, a lack of coordination is an outcome of silo-based IT/IS decision-

---

[1] Mr. Ulrich notes that sometimes the IS/IT department is its own "silo" – with its own budget and ability to set priorities independently of the business units.

making processes. Often, he explains, a given "project team may not be aware that there's other work going on in parallel that overlaps with what they're doing," resulting in "a lot of replicated work going on or work that should be coordinated." He analogizes the resulting system as a "house [that] looks like some kind of big crazy jumble;" instead of remodeling a home to make it useful to its occupants, this system is more like a home with room and closet additions tacked-on, such that it "makes no sense…[y]ou can't find your way from room to room." He finds that sometimes the "core" of these systems - the foundation of the house – is very old; for example, he believes that the IRS still has some system components running that came out of the 1960s.

Mr. Ulrich also emphasized the significance of a once-removed side-effect of the lack of coordination stemming from silo effects: the creation of shadow systems - unofficial systems that are outside of the view and responsibility of the IS/IT people within a company and thus have no "central point of accountability." Shadow systems may make use of database programs or manual linkages between systems, but in Mr. Ulrich's experience, they are most commonly created in Excel. The importance of these systems cannot be ignored; Mr. Ulrich offers as an anecdote that in talking to someone in manufacturing at a multi-billion dollar company, he was told that "if SAP goes out, it's an inconvenience…[i]f the spreadsheets fail, our production lines stop." As a result, Mr. Ulrich considers shadow systems "extremely high risk to a business" as they are "covering for weaknesses in the overall [] application and data architecture."

Finally, the majority of the companies Mr. Ulrich works are considered incumbents – and as a result, they mostly make use of technologies that are "embedded within successful, established ecosystems" (Adner & Kapoor).   However, this can also inhibit them as they consider adopting emerging technology; the so-called "incumbent's dilemma" – where "[t]he very elements that made you successful might now be impediments in the digital world" (Sands).

Sands describes that these incumbents are "often plagued by 'legacy debt,' everything from outdated technology to silos of information, inefficient and cumbersome processes, multi-year initiatives, annual budgets, and industrial era regulations." In addition to these challenges, incumbents need to consider timing of adoption to "improve the efficiency and effectiveness of the innovation efforts that are so critical for survival and success" (Adner & Kapoor). Wholesale change to an emerging technology generally requires the buy-in of the company as a whole; silo-based structures can serve to further inhibit the adoption of emerging technologies.

III.   Critical Success Factors

Ultimately, Mr. Ulrich believes that a silo-based model is at odds with making the organization competitive within the market, and thus, the "organization that can…make the shift towards a more coordinated…more aggregated, holistic budgeting model…will be the organization that wins out." As an overarching principle for avoiding or mitigating the silo effect, Mr. Ulrich believes that all investments in IS/IT should be business-driven, not technology-driven. As a consultant, Mr. Ulrich aims to understand a client's business and strategic objectives, and to work with the client's business and IT people on developing a more "formal, consistent lens" through which to understand "value impacts" on the various business divisions. In Mr. Ulrich's practice, this is the first critical success factor that must be in place for a company to better use IS/IT systems to achieve its strategic objectives.

Another critical success factor, per Mr. Ulrich, is to shift the budget approach to a more "horizontal perspective" to avoid "conflicting parallel budget investments that launch individual projects where the results don't connect or synchronize." One way to work towards this is to start by using a triage approach, whereby projects are selected based on business impact. In the long run, Mr. Ulrich believes that having a "coordinated portfolio funding approach" is a critical

success factor. Under this approach, businesses could create a group such as an "executive investment planning committee around IT investments" that would include the CIO and division leaders from across the business. This group would then be able to make coordinated decisions based on a "common lens of the business."

Mr. Ulrich does note that a frequent roadblock in the development of such a process is an executive compensation model where executives are compensated based on how well their business area performs versus being compensated on the performance of the business as a whole. This ties into an additional critical success factor that became clear in conversation with Mr. Ulrich: a company culture that supports the overall strategic objectives of the business. As described by Mr. Ulrich, company culture can either support or detract from a business that aims to move away from silo-based budgeting and decision-making towards more holistic practices. A Harvard Business Review article posits that making changes to formal organizational structure is one way to try and change silo-related behaviors, but can be "costly, confusing, and slow" (Casiaro, et al.). Instead, Casiaro et. al emphasize practices that can foster a collaborative culture within a firm such as to "develop and deploy cultural brokers [or, those who "have experiences and relationships that span multiple sectors, functions, or domains and informally serve as links between them." Fostering corporate culture that supports horizontal interaction can break down silo-based behaviors and avoid dystechnia in the organization.

IV. Conclusion

The companies Mr. Ulrich works with are generally large and established – incumbents within their industries. As a result, these are companies that need to "thoughtfully and boldly reexamine their strategies and business assumptions [in light of digital disruption]…reliance on customer loyalty, traditional business or operating models, or heretofore barriers-to-entry

represents fallacies in thinking" (Sands). These sentiments are echoed by Mr. Ulrich as he works with these companies. Companies need to keep their focus on their business objectives – if an IS/IT system does not support the current strategic objectives, then the system is not successful, no matter if it is a legacy system that has served the company well for decades or a brand-new system making use of emerging technology. As a consultant, Mr. Ulrich has witnessed IS/IT system identification, selection, and adoption at a wide variety of companies and ultimately believes that companies that are able to adopt a holistic IS/IT decision-making and budgeting process will ultimately be able to forward their business objectives and thus remain competitive in the marketplace.

Appendix A: Annotated Bibliography

Adner, R. and Kapoor, R., "Right Tech, Wrong Time," *Harvard Business Review,* November 2016, retrieved from https://hbr.org/2016/11/right-tech-wrong-time

In this article, the authors discuss how the timing of when to adopt new technology is an important part of the discussion, and is often overlooked in favor of discussions about whether to adopt the technology at all.

Berkun, S., "Why New Systems Fail: an interview," April 17, 2010, retrieved from https://scottberkun.com/2010/why-new-systems-fail-an-interview/

The author interviews technology expert Phil Simon and engages in a discussion about Simon's 2008 book *Why New Systems Fail*. The discussion centers around the topic of failure as relates to IT projects.

Casciaro, T., Edmondson, A., and Jang, S., "Cross-Silo Leadership," Harvard Business Review, May-June 2019, retrieved from https://hbr.org/2019/05/cross-silo-leadership

In this article, the authors focus on practices that can help to encourage and support "horizontal collaboration" and break down the silo-based practices that occur in many workplaces.

Sands, A., "The Incumbents Digital Dilemma: Why Digital Disruption Demands New Skills in the Boardroom," OV Blog, November 7, 2018, retrieved from https://openviewpartners.com/blog/the-incumbents-digital-dilemma-why-digital-disruption-demands-new-skills-in-the-boardroom/#.XuPlJmpKhN0

In this article, the author discusses challenges faced by incumbents as a result of digital disruption. The article additionally focuses on whether company boardrooms need new and different skills to meet oncoming digital challenges.

Taxén, L. and Riedl, R., "Understanding Coordination in the Information Systems Domain: Conceptualization and Implications," Journal of Information Technology Theory and Application (JITTA), 2016, 17(1), pp. 5-40, retrieved from https://www.diva-portal.org/smash/get/diva2:917620/FULLTEXT01.pdf
In this article, the authors discuss the importance of communication in the IS/IT domain, building on theories about the importance of coordination in the human evolution and neurology fields. The authors discuss six major modalities that they posit need to work in tandem for successful coordination. The authors find that coordination theory can be useful in explaining the success or failure of IS initiatives and IT artifacts.

Vatanpour, H., Khorramnia, A., Forutan, N. Silo effect a prominence factor to decrease efficiency of pharmaceutical industry. *Iran J Pharm Res*. 2013;12(Suppl), retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3813367/#B3.
This article discusses various aspects of the silo effect within the context of the pharmaceutical industry. It discusses how the silo effect is defined and some potential steps that can be taxes to reduce the impact of the effect.

Appendix B: Transcript of May 30, 2020 Interview with William Ulrich

[Note: The complete, unedited 1-hour audio interview is at the link below.]

https://vimeo.com/440464889