Five critical factors for ERP implementation

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Introduction

Most of the corporations nowadays see the enterprise resource planning (ERP) system as an essence to support and operate core business; it helps run core processes in a single system for departments. A successful implementation of ERP could reduce 1) Time-to-market; 2) Inventory; 3) Personnel, thus increasing efficiency and revenue (Dezdar & Sulaiman, 2009). Having a great idea is one thing. Turning that idea into reality is another. Unfortunately, many organisations find it difficult to successfully implement their ERP systems. This may pose detrimental risks to both their vendor and client businesses. Therefore, both academia and industry have been studying on factors that bring their outcome. In our essay, we base these resources and the case study of ERP implementation in Nike with I2 — a classical case to study in this topic, and

- Synthesise five critical success factor (CSF) that tremendously impact how an organisation could whether or not leverage ERP technology successfully and effectively to meets its business mission or the strategic goals;
- Discuss the roles of ERP functionalities.

Case study: Nike with I2

Nike has been the world's leading supplier of athletic shoes and sports equipment. Before the brand worthing 33 billion (Tighe, 2022), in 1999, their supply chain strategy was an IT solution to increase efficiency. A forecasting module by I2 was well-known with users like Dell and Walmart; therefore, wanting to unify the supply chain of 120,000 products, Nike decided to implement an ERP with I2. Nonetheless, it resulted a significant loss to both parties, ending in lawsuits (Koch, 2004). Here, we use this case for elaborating with five factors we identified.

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CSF1: Extensive education and training

Often underestimated by executives, education and training is most widely recognised CSF (Umble et al., 2003). As ERP implementation requires a mass of knowledge, the full benefit cannot be realised until users are using the new system properly (Umble et al., 2003). So, education allows key users and supervisors to understand how the ERP system change business processes — that is, to address the various process behind the support of ERP application (Gupta, 2000). ERP education includes on-the-job training with materials about the ERP system (e.g., step-by-step manuals); 10–15% of the total ERP implementation budget should be spent for training, boosting the chance of success to 80%(Volwer, 1999). Such standardised courses are mandatory for every user in the enterprise; they take two weeks to a maximum of three months, depending on the function area and responsibilities (Loh & Koh*, 2004). Educational materials are created during the pilot and training should be the priority from the beginning of the project (Roberts & Barrar, 1992). Otherwise, the cost of staff inadequately trained on the system and business value would be expensive like Nike with I2. Nike took this lesson for their ERP implementation with SAP in 2001: staff cannot access to the system until they underwent extensive training (Koch, 2004). Therefore, an adequate training is critical because it would be a waste if employees are uneducated entirely how to use the ERP system, the enterprise cannot realise their advantage despite spending millions of dollars.

CSF2: Top management commitment

Being the most cited CSF (Ngai et al., 2008), this refers to the involvement and support of top management to the implementation process. Re-engineering towards a single information system for all sites requires a significant transformation (Al-Mashari et al., 2003). The characteristics of an organisation have a huge influence on this strategy, because ERP projects span divisional boundaries and affect many stakeholders in an organisation (Ngai et al., 2008). If not meticulously managed, where executives were unaware of the difference that exist across departments and how much time it should be spent on this large software implementation project — this would be like Nike, costing them 7 years and $500 millions.

According to Shah's (Shah, 1996) and Al-Mashari's studies, a smooth change management entails the adequate support (92.71%), fast-and-effective decision making, resolving political conflicts, ensuring everyone to the same thinking (68.75%), involving competent people (62.5%), advocating the vision and direction for the business through ERP system, harnessing employees' energy and creativity, and constantly monitoring the progress of projects. Such commitment takes places in initiation, facilitation, and implementation (Al-Mashari et al., 2003). Therefore, a successful implementation needs strong leadership, commitment, support by top management.

CSF3: Software development, testing, and trouble shooting

According to Holland (Holland & Light, 1999), *'legacy systems encapsulated the existing business processes, organisation structure, culture, and information technology'*; therefore, legacy system integration is extremely complex. Nike was lacking visibility across the entire process, because their departmental systems functioned in silo. The case with I2 was a recipe of disaster. First, Nike was overconfident about the integration; I2 blamed Nike for ignoring their recommendation of hiring third-party to integrate the system, as Nike did not have core competency in software development (Koch, 2004). Second, despite acknowledging that the I2's system was full of bugs and frequently crashed, under the situation of underperforming troubleshooting and testing thoroughly, Nike decided to skipped their Beta launch and allowed the system go-live. The manufacturing, procurement and sales departments never checked to see if the forecast matched what their customers were requesting in the sales department, and eventually costed Nike $100 million in a quarter. Therefore, with the counterexample from Nike, the system deployment is the key to the success of ERP implementation.

CSF4: Data management

Despite not frequently mentioned in literature, data management is crucial. Nike proved that *"data is the new oil, but only if it's clean."* Their ERP system, during legacy system transformation, had different business rules, poor data integration, and incorrect data formats. This caused a mismatch between their demand planning process, specifically oversupplying Air Garnett and under-supplying Air Jordon. In addition, poor data management had resulted in duplicated orders. Such attribution costed them $100 million sales and 20% shares (Koch, 2004); therefore, a proper data management is crucial. The data validation and conversion mitigate

fatal errors to Nike's processes, selling over 780 million products in 2022 (Misra, 2020). One should also establish policies for usage (McCue, 2021). As such, reliable and up-to-date data refines "oil", helping make effective decisions across function areas and gaining market insights.

CSF5: Vendor Selection

Choosing the right vendor is paramount. Aspired to be sneaker's Dell, Nike chose Dell's vendor — I2 — to re-engineering their process in supply chain by implementing the ERP system. The evaluation criteria including the vendor's affordability, technical capabilities (Bingi et al., 1999), and domain knowledge, level of local support (Al-Mashari et al., 2003) proved that it was Nike's fatal mistake to choose I2 as vendor; the expensive software was counterproductive with an inaccurate forecast. Soonly realised this mistake, Nike stopped using I2's demand planner system and moved to SAP's ERP system. In later 2004, Nike supply chain project was able to reduce inventory levels, integrate between departments, better visualise customer orders, decrease manufacturing time, and more importantly, increase marginal profits. So, this success manifests the importance of vendor selection.

Conclusion

ERP is an essential part of making business successful, it can be overwhelming if not implementing properly. It unifies the people, process, and technology, so the first two factors (i.e., training, management) are about people, and the rest are about process, technology, and vendor selection.

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