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**DRIVING CHANGE MANAGEMENT STRATEGY IN
ERP IMPLEMENTATION PROJECT**

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ABSTRACT

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<p>The purpose of this thesis was to give a holistic approach to change management in an Enterprise Resource Planning (ERP) implementation project. This concept is not only involved in changing a core information system and associated operational processes, but it also goes hand in hand with people and technology processes. The thesis discussed the on-going and forthcoming trends, which are reshaping the organization for their competitive advantages or even to the businesses' survival in this harsh economic battle. Ultimately, the thesis fulfilled the question of how to identify and drive change management strategy in an ERP implementation project successfully.</p> <p>The theoretical part covered change management concept and its definition in the ERP world. In addition, this study addressed factors influencing change management, namely resistance, readiness, communication, and action plan. The theoretical part of this thesis bunched everything together and explained why change management could only deliver its best value once those elements are harmonized on the right level and at the right time. Besides, the thesis has evaluated the selected change models for a clearer approach.</p> <p>A qualitative research methodology was adopted to reach the objective of this thesis. The thesis key informant was a digital transformation consultant. With his broad experience of helping organizations with change management while implementing the ERP system, it was promising for us to be guided systematically and receive a high-quality dataset.</p> <p>The thesis is considered a first-hand document for readers who do not need to have prior knowledge and want to gain insights into change management for ERP implementation. Leaders and researchers could use thesis outcomes for their future ERP implementation projects. We, authors of the thesis, got the unique chance putting theory into practice of how the company could manage to make the ERP implementation project fruitful despite the complexity of changes in people, technology, and process.</p>		

Key words

Change management, change readiness, change resistance, collaboration, communication, ERP, organization, people, process, stakeholders, strategies, technology, training, visualization.

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CONCEPT DEFINITIONS

AI	Artificial intelligence refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions (Frankenfield 2020).
Big Data	Big data refers to things one can do at a large scale that cannot be done at a smaller one, to extract new insights or create new forms of value, in ways that change markets, organizations, the relationship between citizens and governments, and more (Schönberger & Cukier 2013).
Business Intelligence	Business Intelligence is the combination of the best of both the business world and technology world using advanced algorithms and data management techniques to implement better the way a business works (Loshin 2013).
BOM	Bill of Materials
CIO	Chief Information Officer
CSF	Critical Success Factor
Change Agent	The individual or group that undertakes the task of initiating and managing change in an organization. Change agents can be internal such as managers and employees, or external such as consultants from outside the firm. (Lunenburg 2010.)
Change Initiative	Change initiatives are the vehicles by which strategy is delivered. They represent the most significant dimension in determining whether goals and objectives are achieved (Harvard Extension School website).
CM	Change management
CRM	Customer Relationship Management
Data visualization	Data visualization is the graphical representation of information and data. By using visual elements like charts, graphs, and maps, data visualization tools provide an accessible way to see and understand trends, outliers, and patterns in data. Internet site (Tableau website.)
EAM	Enterprise Asset Management
ERP	Enterprise Resource Planning
Generation-Z	Born 1995-2000
HR	Human Resources

IS	Information System
KPI	Key Performance Indicator
Millennials	Known as Generation-Y (born 1981-1994)
MRP	Material Requirement Planning
OCM	Organizational Change management
ORT	Operational Readiness Test
PEOU	Perceived ease-of-use
Process owner	A process owner is a person solely responsible for owning a process. They are accountable for designing an effective and efficient process, using the right people and financial and technical resources to run the process, and delivering quality outcomes as required within the organization. (ServiceNow 2020.)
PU	Perceived usefulness
ROI	Return on Investment
SRM	Supplier Relationship Management
Super user	Super users are the representatives of their departments and the first line of support for end-users. A super user should know and understand their users and their functions. (Swanson 2017.)
TAM	Technology Acceptance Model
UAT	User Acceptance Test

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1 INTRODUCTION

It is estimated by World Economic Forum that by the year 2020, the total amount of data is going to reach 44 zettabytes (Desjardins 2019), but why data is growing so fast is a complicated question. We are now living in a world of exponential growth in digital evolution, and we have been leveraging data insights for various purposes. From the business aspect, data has proven to be beneficial in decision making, business strategy, and process automation. In addition, innovations are easily justified when exploiting the information from an integrated system with consistent data. The solution to a digital business suite system with data management and centralization while running simple lies in Enterprise Resource Planning (ERP) system. ERP has been widely defined as business process management software programs that help the enterprise to integrate and coordinate their information across the organization system. Using the shared database and reporting tools, ERP enables the seamless business process, resulting in better operational efficiency (Monk & Wagner 2013). In other words, ERP plays a vital role in the fast-evolving business environment of organizations.

ERP is a vast application demanding colossal time and effort to implement. During the ERP implementation process, there are undoubtedly many changes towards people, process, and technology, which can be overwhelming and tedious for the entire organization. In many cases, the project implementation fails due to the organization's inability to embrace those changes, addition to factors such as over-budgeting, poor planning, or deadline missing. This is when change management is needed to provide the organization with structured approaches to leverage positive changes as well as assisting change agents and supporting individuals, hence inhibiting the success of ERP projects.

We had a passion for ERP related subjects. Thanks to Centria University of Applied Sciences, we have got a unique opportunity to equip ourselves with SAP ERP knowledge. Having experienced an ERP system through Next-Gen Lab projects, we found ERP implementation an intriguing topic. With our curiosity, we determined to investigate the success factors for any ERP projects and found out change management one of the most vital factors to be addressed. Consequently, we established a need for developing change management strategies in ERP implementations as a thesis topic.

The first goal was to provide a theoretical background addressing the importance of change management in ERP implementation projects, especially in identifying change management strategies. We achieved this goal by extensively researching literature and studies on the subject matter. The second goal was to

gain in-depth insights from data provided by ERP change management consultant. The final goal was to come up with our finding discussion on the topic, which hopefully can benefit researchers and readers. This is accomplished based on our research questions and interview with ERP change management consultants.

Triggered by our research motivation, the thesis objectives were bundled into three research questions to which the thesis aimed to answer. The first question concerned if a framework can be adapted by organizations to fulfil diversifications across the globe:

Is there any universal change model designed for organizations while implementing ERP?

Next, we wished to dig into the details by pivoting change's aspects to squeeze out the answer for the second question:

What are the critical elements for organizations when driving change management strategy in ERP implementation projects?

We are ambitious to take a big step predicting the next move of change. Having the motive, we bravely formed the last question focusing on the future:

What are the trends shaping organizations' transformational change in the near future?

By addressing these three questions, we provided a holistic picture of change and ERP project management. Firstly, change management in ERP implementation project was transferred to a leader-friendly concept, which was possible for visual planning, performing and monitoring through a well-structured model. Secondly, the thesis explained change's influences and suggested practical possibilities to manage. Thirdly, the study approached the future prediction of companies' transformation under our point of view. Given aforementioned research questions, we designed our approach with steps as displayed in Figure 1.

The thesis conducted a wide-range literature reviews to gain themselves a good-level knowledge of the thesis topic. In parallel, we presented the relevant selected aspects into a structure to get readers being on the same page. At this point, the thesis had puzzled information pieces and logically built an answerable story to the research questions (Graustein 2011, 128-129). However, to keep our hypothesis "down-to-earth", we have tested with data collected from a world-class digital transformation consultant's interview. By his life-long experience in the field of ERP and change management, fascinating practical company cases were brought up for sampling analysis. As a result, we managed to clarify our initial

prediction and reached the research goal with pleased findings, which will be depicted in a latter part of this thesis.

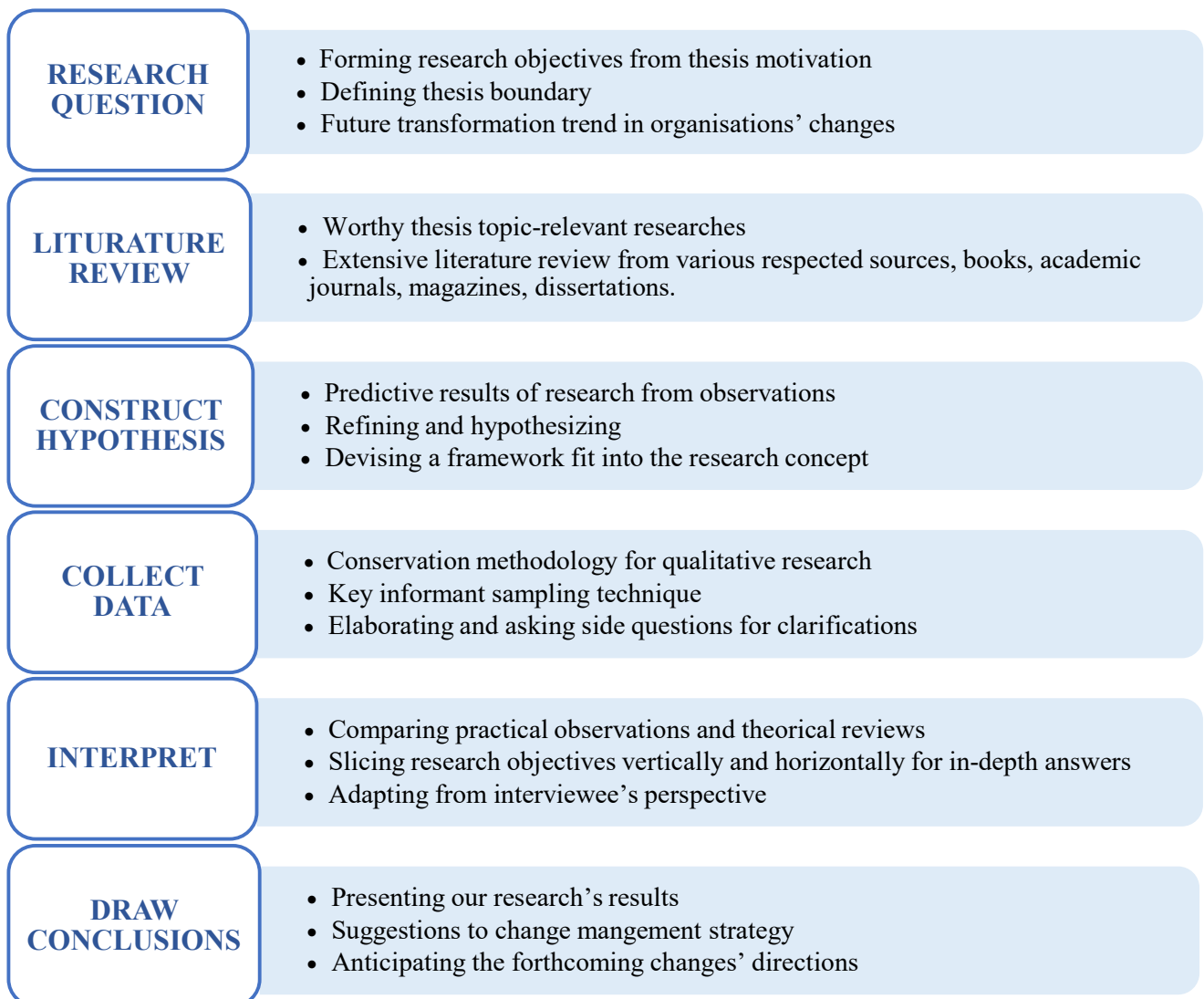


FIGURE 1. Thesis approach

The Figure 2 demonstrates the structure of this thesis, which consists of the key elements such as introduction, theoretical part, qualitative research method, discussion and finally conclusion. The introduction part of this thesis gives a holistic overview of our thesis. It describes shortly the research purpose, a brief content look, the applied methodology, and the thesis findings. Besides, our motivation to choose this topic is also mentioned.

In the Theoretical parts, change management concept with its components is illustrated solely as well as under areas of an ERP implementation project. First, we start with the ERP concept, history and shortly list out several key elements and success factors in an ERP implementation project. Second, change management chapter covers change forces, types, and levels. Third, the thesis dives to the areas of change components, namely, stakeholder analysis, resistance and readiness to change, implementation plan, communication, and training approach.

The thesis has adapted two change management frameworks to be listed: change management model by Kurt Lewin and Luc Galoppin & Siegfried Caems's organizational change management model. Change management models were validated against thesis key informant information to evaluate the most suitable ones for organizations during their ERP implementation process. In specific, they were validated using the qualitative research methodology.

The purpose of qualitative research was to provide a comprehensive description of the topic of change management, concerning key elements that influence the success of an ERP implementation process. We had executed a qualitative research method in the interview context with an ERP change management consultant. In particular, the research method has undergone three main phases, from initial interview design to data collection phase and eventually, data analysis. The result of this research methodology was then applied to the latter parts of the thesis as discussions and conclusion.

We find it challenging to select a one-size-fits-all change model for organizations. The most suitable model should be built from other three critical elements namely: company culture, country culture and company ability to adapt to change. However, gaining from the thesis interview outcomes, Capgemini collaborative business experience is called as a modern and widely used change model. Driving a change strategy in ERP implementation is more than having a right model. Indeed, it concerns five aspects consisting of change leadership strategy, change resistance management strategy, communication strategy, user's proficiency and knowledge transfer as well as the strategy alignment between change management and ERP implementation project. In today's competitive business environment, changes are triggered from external trends. Artificial intelligence, visualization and workforce are the ones that organizations should consider responding accordingly.

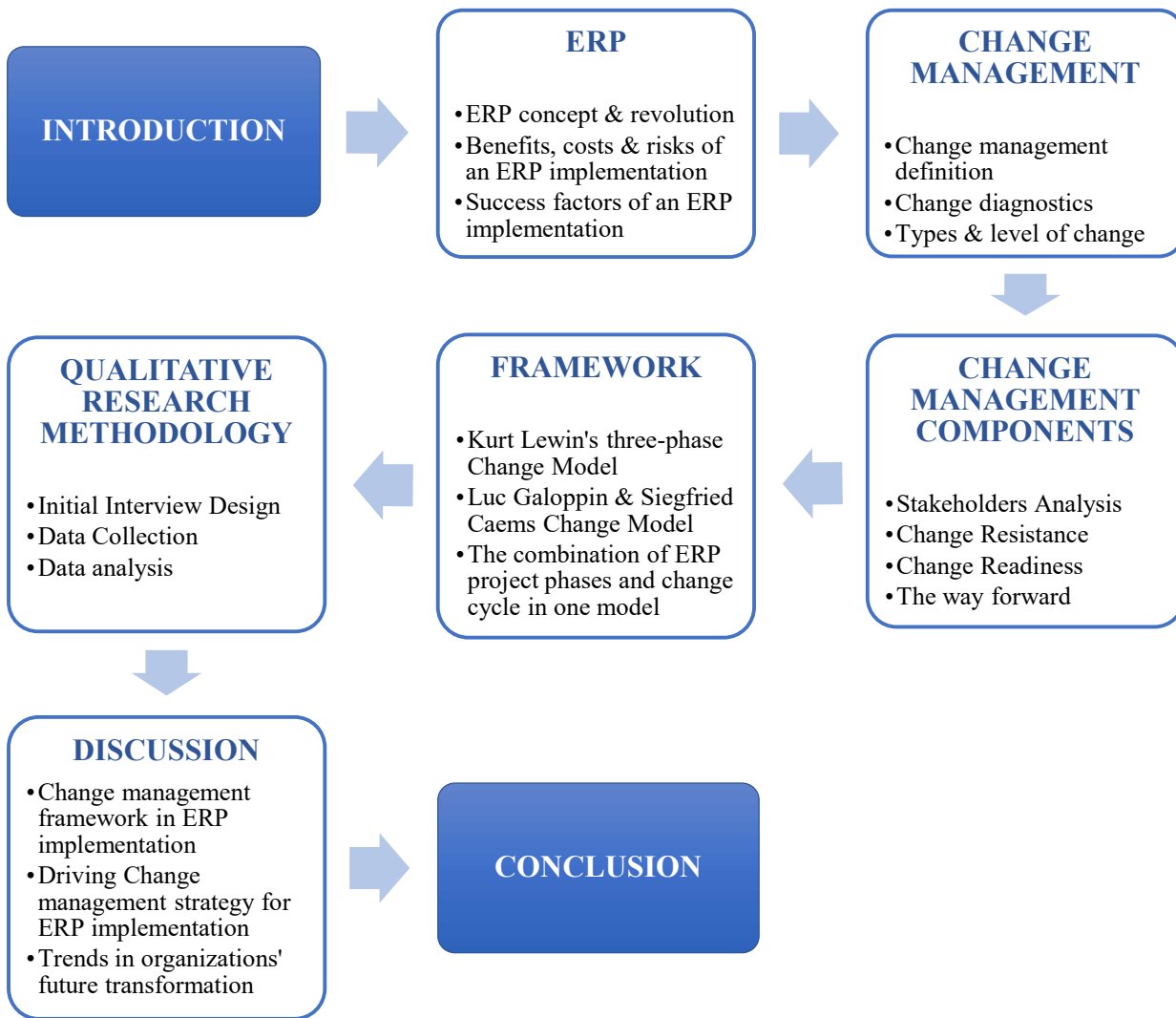


FIGURE 2. Thesis structure

2 ERP

People today are familiar with the abbreviation ERP due to the popularity of its deployments across the globe. However, when a person googles “what is ERP”, they will get tons of different definitions depending on the websites and those can vary from each other. Aiming to give our thesis’s readers a holistic understanding from the root, we started with this chapter, which covers the ERP concept, its history revolution and further ERP implementation project’s aspects.

2.1 ERP concept

ERP system is an information system that streamlines operational business processes and aiming to get the right information to the right people at the right time. The integration between all different aspects of business processes is automated and smoothed across the company from marketing and sales, production, purchasing, supply chain management to financial accounting, and personnel. The business management board, therefore, enhances their decision making, manages their organization-wide resources efficiently and effectively by adopting ERP using a central database and having standard management reporting tools. (McGaughey & Gunasekaran 2007.)

An ERP system nowadays normally consists of standard integrated functional modules, namely, Marketing and Sales, Supply Chain Management, Accounting and Finance, and Human Resources. As the old-school style, those areas were separated, and people considered that what happens in another department would not relate to the one they were in. (Monk & Wagner 2013, 2.) Thanks to ERP, the definition has changed. The entire company runs as a blood system where all functional operations are consolidated.

ERP standardize Sales into a sequent process of receiving requisitions, applying prices, making quotations, getting orders, checking available inventory, managing customer credits, handling deliveries, invoicing customers, and gathering payments (Monk & Wagner 2013, 74). Besides that, Customer Relationship Management (CRM) is a module that interacts directly with customers and relies on ERP data. Marketing and Sales adopt a CRM platform to communicate with local and global customers in building

long term relationships. Mary stated out an example of Wall-Mart in The United States that sales personnel from California will know precisely the problem of a consumer currently filling in an order form (Sumner 2014, 66).

As a statistic figure from Deskera company, 25% is the portion of how much money that companies invest in boost their Supply Chain Management features in an ERP implementation project (Deskera 2017). That means SCM is a crucial component of ERP solutions. This area covers the activities that connected to other departments, including materials ordering from vendors, goods arrival receipt, inbound transportation, production planning, product execution, picking and shipping of customer orders. Otherwise speaking, SCM is the expansion version of manufacturing processes adding customers and suppliers. (Monk & Wagner 2013, 114.) To product demands and sales forecasts, in ERP, SCM streamlines the method, constantly updates the on-hand product quantity, systematically request for replenishment, automatically estimates future product needs and ideally plan production schedule (Deskera 2017).

The accounting component is tied up with other areas. The company, hence, can record all transactions happened precisely. The ERP users quickly get in-time and accurate information due to the integrated system and shared database. More important, ERP usually comes with built-in reporting tools supporting financial workers to query data and tailor the report meaningfully according to their needs. This way, the managers gain insights to make better decisions in financial accounting and management accounting. (Monk & Wagner 2013.)

An ERP system provides HR modules with subprocess of employee information, skills inventory, position control, application picking, compensation, performance management, training and development systems, government reporting and payroll (Sumner 2014, 115). Those activities are also categorized into five main groups of functions, namely, HR management, benefits administration, payroll, time and labour management, and employee self-service (Ashbaugh & Miranda 2002). ERP has been keeping HR up with flash developments of technologies in this era.

ERP system is designed to be a modular software in which customers can tailor ERP's components to suit their usage. For instance, mix and match different parts from several different ERP suppliers to achieve the best business performance value (Paroda 2015). The integration between ERP and Enterprise Asset Management (EAM) can be seen as a common case of this tailoring. In figure 3, the ERP system is leveraged by KPI reporting feature throughout all areas in the company, and this mandates EAM's

data to be pushed to ERP (McNeely 2015). With this scenario, enterprises manage to reduce costs and increase productivity (Padora 2015).



FIGURE 3. An example of a typical EAM to ERP integration scenarios (adapted from Paroda 2015)

Perkin quoted in his article, the main usage of ERP that lifts the business to a new level. ERP is a wanted system, which business owners need to improve their daily working performance's efficiency and effectiveness (Perkins 2019). In other words, ERP has been putting business practices into a standard working way (Syntax 2016). First and foremost, all functional areas are integrated within ERP systems from main processes; order-to-cash, purchase-to-pay, plan-to-produce, to HR information. The information flow is facilitated between people and processes, where the ERP system acts like a proactive and excellent coordinator, and the financial aspect is always connected tightly. The ERP systems track, and record all occurred activities to the accurate locations in financial accounting components.

In a post of Syntax, a partner company of world-class technology pioneers stated that ERP has got the issue of multi-platform resolved. Organizations have their IT landscapes compatible; data is centralized in the same database, and users can access accurate, realizable and up-to-dated information. Moreover, monitoring and maintaining a common IT platform is bringing a huge noticeable benefit to the companies by reducing cost, time and efforts. (Syntax 2016.)

The ERP solution leverages HR aspects undoubtedly. Employees get a convenient, simple and transparent channel to easily communicate with each other and to the management teams. ERP enables each employee to display and manage their personal information, such as working hours, traveling expenses, allowances, vacation request, and so on (Perkins 2019). To personnel management, ERP gets them to work less with a modern and attractive working style compared to the old-fashioned one. They could follow the staff performance in different functions to anticipate the workforce demands and shortages and react quickly to urgent situations. Talent Management is a brilliant part of what ERP built up in its HR component. The companies can approach and handle their desirable workforce strategically and agilely by provided an ERP platform. Vice President of Global Human Resources of AGCO Corporation has given her compliment on how ERP Talent Management has kept the company to stay ahead of talent acquisition and resource training. It is a sustainable solution to stick with. (SAP SuccessFactors Talent Management.)

With external partners, especially customers and suppliers, ERP improves communication significantly. Information related to partners is collected to the system, and this assists the personnel who is working directly with those partners to recognize and act unexpected matters in the fastest timing. From customers, the interactions could be tracked from activities such as customer acquisitions, customer orders, shipment deliveries, product returns, aftersales services. To the procurement area, the negotiations, as well as the deals, are recorded and informed, so the buying staff easily ensure which suppliers provide the best offers with the required criteria. In addition, ERP provides the business with a great possibility to analyse their partners and obtain insights from gathered data. The relationship, therefore, gets enhanced and developed strategically. Undoubtedly, the organization gets the most out of the ERP systems if their partners respond quickly or even integrated into the company ERP system. (Perkins 2019.)

2.2 ERP revolution

Alike other product histories, ERP was born and has been developing due to business needs. People were from dreaming of flying like a bird to executed a flight with “Flying Machine”; and from wishing an ability to talk to each other remotely to everyone having a phone individually as a must nowadays. Similarly, a few decades ago, a virtual company scenario where all processes are connected relatively was just science fiction to people. However, ERP was invented, and its history was recorded.

In the study of McGaughey and Gunasekaran, they stated that ERP rooted in Material Requirement Planning (MRP) and the first time defined to its correct concept back in the 1960s. The MRP was a master production where all needed materials to manufacture a product was named out (Sumner 2014, 2). The question of structuring a complex product with a large number of items was solved by the born of Bill of Materials (BOM). However, the manufacturing companies were not just happy easily since MRP was not feasible to bring an effective production plan. In other words, provided an excellent MRP does not mean that the production would be performed as expected due to the unavailability of other resources, such as human and machine capacity. (Kurbel 2013.)

Given a massive need to develop MRP, in 1975, Orlicky Wight, for the first time, introduced the MRP II, which stands for Manufacturing Resource Planning, where all elements needed for production are put into a plan. The MRP II system advanced production by calculating what, when, who, and how many related to production planning. At the same time, MRP II got the database into use and replaced the traditional file system. (McGaughey & Gunasekaran 2007.)

The market need was not just stopped there at MRP II. The enterprises, which their businesses are non-manufacturing sectors, including financial services, airlines, education, healthcare, their desire to have an information system triggered the evolution of the current MRP II back in the day. As a result, ERP was found in the 1990s to fulfill the requirements from other areas than manufacturing businesses. The newborn ERP got all information flows connected, integrated all operational processes in a company. (Kurbel 2013.)

TABLE 1. A Foundation for Understanding Enterprise Resource Planning Systems (adapt from Sumner 2014)

<i>Types of Systems</i>	<i>Time</i>	<i>Purpose</i>	<i>Systems</i>
Reorder point systems	1960s	Used historical data to forecast future inventory demand; when an item falls below a predetermined level, additional inventory is ordered	Designed to manage high-volume production of a few products, with constant demand; focus on cost
Materials requirement planning (MRP) systems	1970s	Offered a demand-based approach for planning manufacture of products and ordering inventory	Focus on marketing; emphasis on greater production integration and planning
Manufacturing resource planning (MRP-II) systems	1980s	Added capacity planning; could schedule and monitor the execution of production plans.	Focus on quality; manufacturing strategy focused on process control, reduced overhead costs, and detailed cost reporting.
MRP-II with manufacturing execution (MES) systems	1990s	Provide ability to adapt production schedules to meet customer needs; provide additional feedback with respect to shop floor activities.	Focus on the ability to create and adapt new products and services on a timely basis to meet customers' specific needs.
ERP (enterprise resource planning)	Late 1990s and onward	Integrated manufacturing with supply chain processes across the firm; designed to integrate the firm's business processes to create a seamless information flow from suppliers, through manufacturing, to distribution to the customer.	Integrates supplier, manufacturing, and customer data throughout the supply chain.

Oracle, NetSuite, Microsoft Dynamics, IFS, and SAP are the major names in the ERP market. These ERP vendors have convinced successfully the business owners specialize in different types of industries, from manufacturing to education, hospitalities, financial services, airlines, healthcare, to expel their antiquated systems.

The core modules of a standard ERP system typically consists of Financial Accounting, Sales and Marketing, Supply Chain Management, and Human Resource. However, prominent ERP systems today run not only throughout all parts of a company but also to a company's external partners. The outside-organization interactors got connected to the company ERP system by advanced add-on modules relevant to different areas. In particular, to maintain and tighten customer and supplier connections, CRM and SRM will do the jobs, respectively.

Driving with the flash development of technology, the trend of the future ERP system is the crucial assessment that enterprises are keen on to catch up. Besides, the more developing economies are, the more complex the data is. The circumstance leads to the need to have an ERP system deal with big data, strategical decision reporting, and continuous integrations.

Moreover, cloud ERP is getting wide-used. Business is getting rid of their costly server to outsource one. Additionally, there is no existing risk of conflict between in-house applications when upgrading one application. Enterprises are given flexibility and freedom to choose the cloud-based solution to fit their business performance. (Gruber 2014.)

2.3 Identifying benefits, costs and risk of an ERP implementation

Implementing an ERP system requires a strategic project plan in which benefits, costs, and risks are respectively considered and analyzed. This also assists organizations in determining the return on investment from ERP implementation project. It is vital to evaluate whether the benefits outweigh the costs and vice versa.

The role of ERP lies in its benefits. It is evident that an integrated information system brings about steady and smooth business processes. To be more specific, the advantages of implementing ERP system divide into four groups, known as strategic benefits, managerial benefits, operational benefits, and organizational benefits.



FIGURE 4. Benefits of implementing an ERP System to the organization (adapted from Bansal 2013)

ERP integrates data, people, and all business units across international borders. This contributes to the growth of on-going and future business processes. Real-time data is available across business functions, which makes the data analysis process quicker and more effective. This also results in timely strategic planning, helping the top manager to propose timely strategies or decisions. Nowadays, a company can offer more products or services to customers their customers, hence increasing the customer satisfaction level. An integrated system with streamlined processes helps the company to gain competitive advantage and become a market cost leader (Monk & Wagner 2013).

With ERP, the company can dramatically reduce costs and improve operational efficiency. This is achieved through the enhancement in data management, communication, and decision making. Concerning costs, they can be listed as labor cost, administrative, or inventory cost. An example of taking inventory cost as a significant contributor to the company's profit margin, ERP solution helps to reduce wasted inventory space or carrying cost as a result of effective material requirement planning and inventory management process (Bansal 2013).

Data plays a vital role in resource management and decision making. If data can be accessed accurately and timely, the top manager can control their assets more efficiently. For example, monitoring activities, including financial and manufacturing performance or overall efficiency can be done anywhere and anytime without any hindrances in geography, language or culture.

TABLE 2. ERP implementation project cost as a percentage of revenue (adapted from Bansal 2013)

<i>Revenue (\$M)</i>	<i>Cost as Percentage of Revenue %</i>
<15	3.45
16-50	2.15
51-250	2.36
251-750	1.31
>750	0.38
Other	1.40

ERP implementation process involves a lot of changes that make the organization adaptable during the time of changes. Employees can improve their functional skills and become more proactive in problem-solving as they undergo many training sessions. Furthermore, internal communication is expected to improve as ERP bridge barriers of information or communication among departments. Another great advantage that ERP could offer to any organization is that it cut down on duplications activities, for example, records or reports.

Intangible benefits are the ones that cannot be easily measured, quantified, or put monetary value. These can be known as customer and supplier satisfaction level, information accuracy, resource utility, or decision-making capability. Increased experience of the employee is also a compelling intangible benefit (Keen 2003).

Cost factors in ERP implementation projects depend vastly on the size of the organization, the number of users, sites, interfaces required, and modules implemented. There are other factors such as consultants' fees, length of time in implementation, and training. A full scope ERP implementation project is expensive and time-consuming, which ranges from one to three percent of the revenue (TABLE 2). The cost on average can reach a couple of million USD. Data in Table 2 was conducted and verified (Bansal 2013).

A large company with over 1000 employees can spend \$100 million to \$500 million for an ERP system. It could take from four to six years for the full ERP implementation in this case. A mid-sized company with fewer than 1,000 employees is likely to spend \$10 million to \$20 million, and the implementation process is expected to take year years. A smaller company with \$100-250 million in annual revenue could spend about \$1.4 million for an ERP implementation (Monk & Wagner 2013, 37).

Direct costs can require the cost of software, hardware, consulting, training, and project team cost. Indirect costs can be found through lost productivity cost, changes in employee salaries, or employee motivation. Especially after the go-live phase, running costs, as well as maintenance costs, will also be updated to the general budget (Bansal 2013). Besides, there will occur a lot of miscellaneous expenditure under the title cost.

The ERP implementation could not reverse after the go-live phase. Therefore, business strategy and vision of organizations should be taken into thorough consideration; otherwise, the project is likely to fail (Davenport 1998). Moreover, any software implementation can experience delays or overall performance problems. Reports have shown that in the early ERP implementation, a very little percentage of companies achieved a successful implementation process. Taking the case of Hershey Foods as an example, the company wanted to save time, so they cut down the implementation process from 48 months to 30 months by implementing huge pieces of the system at the same time. Primary testing phases have also been cut off so that the system could go live during the busiest period of the US confectionery factory. However, they had made a terrible mistake in project timing, and as a result, Hershey lost a huge share of the Halloween candy market in 1999 (Perepu 2008, 3).

2.4 Success factors of an ERP implementation project

Success factors concept was first established by D. Ronald Daniel of McKinsey & Company in 1961 and was later redefined into Critical Success factors (CSF) by John F. Rockart. CSF is considered management term for acquiring the mission and success of any company. As the implementation of ERP can be tedious in a way that markedly affects the whole organization's business process, CSFs are those crucial conditions determining the success of ERP implementation. There have been a lot of studies conducted with an eye toward identifying CSFs in ERP. A group of authors in their article have emphasized that communication at all levels of the organization was of importance (Falkowski, Pedigo, Smith & Swanson 1998). Holland, Light and Gibson have classified CSFs into strategic factors and tactical factors (Holland, Light & Gibson 1999). Dong has highlighted the impact of top management on enterprise systems implementation (Dong 2001). According to many researchers, technology, delivery system, and performance were addressing factors in CSFs. Ferratt, Ahire and De have stated that project management and best practices adoption could facilitate the success of the ERP implementation process (Ferratt, Ahire & De 2006). A thorough exploration of extensive literature reviews has been done to

categorize ERP CSFs into three wide factor groups, namely, organization, technology, and people. (Nah, Lau & Kuang 2001.)

2.4.1 Organizational factors

While offering a solid ERP implementation plan, a change management plan is demanded to reduce discomfort and resistance tendencies associated with change. That is to make changes manageable among organizations. To be more specific, whoever in the company affected by the change should always be identified and frequently notified about what will be coming. The following step is to demonstrate convincing business reasons for the need for an ERP implementation. Besides, employees are trained on how to behave and adapt to those inescapable changes, because ERP project implementation will only be fruitful if people can embrace it. Without change management effort, an ERP implementation project hardly achieves its success.

Top management support has been a significant indicator of the achievement of ERP implementation objectives. It is suggested that top managers assist projects by showing their commitment, allocating valuable resources, and giving motivational encouragement to the team. The higher senior management support level can produce more positive impacts, hence contributing to greater success of strategic information systems planning (Basu, Hartono, Lederer, Sethi 2002).

In general, ERP implementation depends heavily on project management. Therefore, implementation plans must be effectively developed to illustrate project activities, personnel as well as a committed project team. A steering committee consisting of senior-level management is established and responsible for ERP package selection and relationship management with external consultants (Nah et al. 2001). In addition, a project team should combine consultants and internal employees, both from business and technical background (Sumner 1999). An ERP project must be considered a top priority within the organization.

Open communication should be involved in the whole organization, regardless of functions or levels. Besides, business and IT personnel have a clear and specific communication plan. This also applies to suppliers and customers.

External consultant involvement is an essential factor in building a capable ERP project team. ERP consultants with in-depth knowledge of software and business workflows can help prevent risks and maintain any enterprise system. Throughout ERP implementation, the consultant works to provide essential training and resources for internal employees to make sure their workforce is all set. However, it is highly important that the consultant could share their knowledge with the organization, so that the company can reduce their reliance on consultants, hence increasing success probability (Motwani, Mirchandani, Madan & Gunasekara 2002).

2.4.2 Technological factors

As ERP is also a complex information technology projects, technological-related factors contribute to the success of the ERP implementation. The role of technological factor is predictor in the phase of pre-implementation or implementation ERP. According to Bekhet and Sofian research, technological factors make an impact on both internal and external aspects in fostering the organizational output. (Bekhet & Sofian 2018.)

For instance, throughout the conversion process, data accuracy is the key to the ultimate success of the system. This can do executed by the project team to ensure data accuracy as well as cleaning up suspicious data (Yusuf, Gunasekaran & Abthorpe 2004). It is stated that the involvement of testing exercises should be taken into consideration, especially during the final phases of the implementation process. (Nah et al. 2001). Besides, simulation exercises could be examined before the system “goes live” (Yusuf et al. 2004).

2.4.3 People factors

There is no doubt that the more employees are motivated and satisfied, the more organizations have staff retention. This factor is, unfortunately, overlooked, resulting in uncalled project failure. There are various ways leaders can do to boost their employees' morale, but the top priority lists include creating a stimulating work environment, giving employees challenges, recognizing excellent and providing benefits.

Users of the ERP system should be given specific pieces of training, for example, in IT or business-related skills. The project team and users are recommended to cooperate under training facilities control. Also, job redesigning means restructuring tasks, duties or responsibilities to empower employees. This activity aims to put the right person at the right job based on their competences and skills, hence enhancing their job satisfaction and bringing out the best output.

3 CHANGE MANAGEMENT

Change is always inevitable, yet change is less likely to arise from its own sake. The real reason for the changes is usually due to unproductive operations in organizations or processes. It can also be from increasing competition and demands. Therefore, it is crucial to learn the ‘‘why’’ about the changes by firstly determining its value proposition, which later leads to a resolution about the changes (Zhu 2016, 9). In the book *Change insight*, Pearl Zhu has categorized change based on its scopes and effects. To be more specific, a small type of change could include the update of software or business process, while digital transformation was listed as a big-bang type of change.

3.1 Definition of change management

The concept of change management, therefore, transpires as a thought and flash of insight to gain deep understandings about the inner and intuitive nature of changes. In other words, this concept has generally been defined as guidance on how to prepare, equip and support individuals or organizations to leverage changes into organizational success. Change management in an organization has also been divided into three main purposes, either for development, transition or transformation. Change management occurs at three levels, starting from individuals to project and across the enterprise (Prosci 2019). It is highly essential that the organization does not only carry out systematic approach but also considers the shifts of mind and culture, intending to reach the goal and benefit of change management (Rouse 2019).

Challenges or problems can happen anytime due to a lack of planning, consensus, and communication. Another big factor is known as employee resistance. During many change management processes, even though organizations well perform their technical requirements and milestones, they are likely to fail because they neglect the people factors, especially on how employees embrace and adapt to changes. This usually takes place when employees do not percept that change is essential or possible, and they fear failure. Top managers handle resistance to change by providing training, knowledge of the change, support and effective communication to their employees.

TABLE 3. Most popular cited ERP implementation success factors (adapted from Finney & Corbett 2007)

<i>ERP implementation success factors</i>	<i>Number of citations</i>
Top management commitment and support	25
Change management	25
BPR and software configuration	23
Training and job redesign	23
Project team	21
Implementation strategy and timeframe	17
Consultant selection and relationship management	16
Business plan and vision	15
Balanced team	12
Communication plan	10
IT infrastructure	8
Managing cultural change	7
Project management	6
System testing	5

According to Finney and Corbett, change management belongs to the top list of ERPs cited critical success factors (Finney & Corbett 2007). Change management is a determining factor in ERP implementation, starting at the project phase and throughout the whole project life cycle. ERP implementation can affect or change organization culture (Gargeya & Brady 2005); therefore, enterprise culture and structure should be well-managed. These include people, organization and culture change. Many organizations have failed to accomplish this successfully (Gargeya & Brady 2005). Other organizations have been found to underestimate the scenario of how their ERP implementation influences their enterprise culture. Davenport stated that companies should handle culture change carefully and precisely as culture changes do not happen by magic (Davenport 1998). Research has shown that “readiness for change” is one of the most prevalent failure factors in the change management process. To reverse the situation, managers should act in controlling employees’ readiness and resistance to changes in the ERP system (Aladwani 2001).

3.2 Change diagnostics

In this light-speed innovation of technology that we are living, changes are a must for businesses to maintain their positions in the industry. However, the effort to keep up with changes, make the enterprise competitive as well as intuitive, is uneasy. The managers who control the change strategies need to have a sensitive mind, a foreseen head to know what and when the changes are raised and inevitable.

Different from the past, when companies only focus on three aspects consist of quality, reliability, cost. In today's world, change has been a norm in organizations with three standards called adaptiveness, responsiveness and flexibility in all areas (Wisdomjobs). The forces are complex and diverse, pushing organizations in the direction of changes.

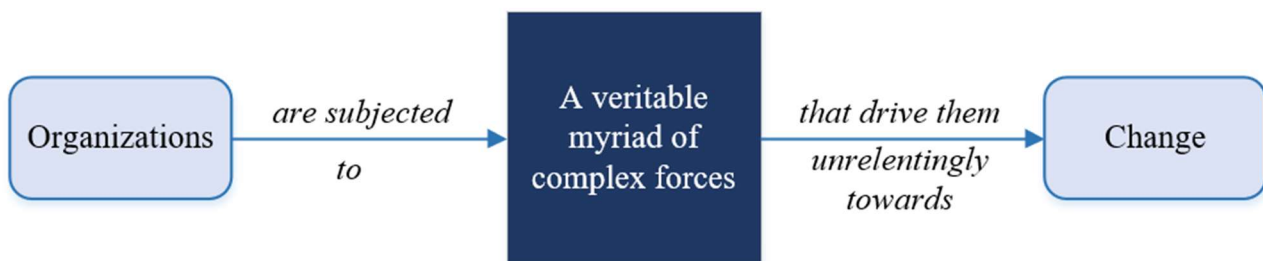


FIGURE 5. Organizations are subjected to Change (adapted from Murthy 2007, 5)

According to C.S.V. Murthy, two forces generate the need for change grouping into internal and external. In terms of external forces, the marketplace, technology, economics changes, government laws and regulations, and labor markets are creating the requirement of changes. In terms of internal forces, the author addressed the company's inside element, including the business strategy, personnel, technology deployment, working pattern within the company, employee willingness, and so on. External forces are difficult to manage, easy for companies to adapt and internal forces, vice versa. Managers must take into consideration when leading the company in the changing journey to gain competitive advantages and survival of a company. (Murthy 2007, 3-4.) In this study, key forces that drive change management in an organization are illustrated, including technology, people, information flow and communication, globalization and competition, social trends.

Technology is considered the most considerable factor causing the change. Not long ago, businesses were dealing with a massive load of paperwork and struggling to organize them; working in a cross-continental team was almost impossible; remote work was undoable. Fortunately, technology has got

those issues resolved. Modern technology has been shifting the world economy to a higher level where business communications, commercials, electronics are advanced (D'Ortenzio 2012, 27). Especially in this twentieth century, technology is growing in a breakneck speed, keeping up with the changes means that the way of working in organization is digitalized and advanced at the same time.

People force has been driving the change ship of businesses dramatically, and people in this concept not only mean the workforce but also customers, suppliers, stakeholders. And people diversity can be rooted in many reasons such as generations, cultures, languages, backgrounds, educations, and so on. This distinct on how people perceive, behave and influence the changes. Notably, multi-national companies manage a network of mixed people who are different inside out, so the need for changes is undeniable. If the change is recognized, handled correctly, enterprises will shift its value to a higher level where the language used is the company language.

To the current fact, Forbes Magazine has stated out that Millennials are replacing the workforce and become the dominant demographic in the job market. Different from the old generation, Millennials are dynamic and tech-savvy. They no longer wait to change, but proactively take control of change. (Tucker 2018.)

Along with technology growth, communication standards became much more complicated than ever (Rizescu & Tileaga 2016, 139). Convenience, real-time information and quick response are success factors that companies are striving to improve in information flow and communication. Not-to-satisfy spirit pushes the change continuously and speedily. Businesses are even going smarter ambitiously. In 2018, businesses addicted to how artificial intelligence is capable of enhancing their work performance. Users can sit back and get help from 'the smart machine' on data visualization, predictive analytics, and better decision making. NASA, Google, Amazon, Facebook, Apple are the giants leading this trend and following with small businesses.

To maintain the current position and jump to a higher rank in market share, enterprises are globalizing their organizations. Along with technology, globalization has leveraged the competition of an industry leader to its rivals. This has directed companies by thinking globally (Wisdomjobs). By doing so, corporations take no culture variances, no distinct geographic, no different languages into ways of working. Instead, communication and collaboration within a company should be carried out by the one and only way that applied for the whole organization.

Changes in social trends are always a cause leading the changes in an organization. Especially, the trend makes the demand and the requirement from people different. With the pressure of keeping business offers meet the needs, enterprises must always innovate in their products and services. The top companies in any industry are the one who reacts quickly to the taste of society. And unsurprisingly, change can create new leaders who can catch the trend and use it as a competitive advantage to win customers (Rizescu & Tileaga 2016, 141).

3.3 Types and level of change

There are many ways to approach change management from different perspectives. In this study, changes are illustrated from two angles. The first approach is classified into two groups, these are planned and unplanned changes (Ha 2014, 23). The second one looks more on organizational characteristics, including top-down change management, transformational change management, and strategic change management (D'Ortenzio 2012, 30).

Planned change means the company activeness in recognizing, interacting, and enforcing on its way forward. The companies proactively research, analyze and anticipate the need to change, together with strategically tackle the plan and execution. The changes in this concept accumulate as a part of daily basic work. Personnel is engaged to the planned change driving the long-term revolution of a company, which is a continuous motion. As summarized by Huong Ha, many authors have introduced their models of planned change approach. Some well-known models are consolidated from authors Lewin, Kotter, Kezar and named Three-step change model, Eight-step change management and Six main change models and theories, respectively. (Ha 2014, 25-33.)

Unlike planned change, unplanned change triggered by the urge, and the company reacts passively without any preparation beforehand. Dexter Dunphy and Doug Stace [1993] have written a theory regarding the unplanned change. They stated that companies differ from each other in change management because of obtaining such distinctive situations as well as processes, organization and strategy variances. As a result, changes also occur in a discontinuous, outcome-oriented manner. (Dunphy, Griffiths & Benn 2003.)

As aforementioned, unplanned changes normally derive from unexpected factors. Those factors could be from inside and outside the environment and result in a performance gap of a company. Due to the

sudden characteristic, human resources are not aware of the change and forced to adopt it, despite the fact that this type of change requires quick action to fit the company in the movement. As a highlight case of successful unplanned change management, Shell changing story back in 2004 saved itself from falling into the hole of bankruptcy. Standing in front of the low oil price threat, Jeroen van der Veer, determined that the company had to change in terms of structure and process for its survival. What they have done is packed in Shell Downstream One, which involved the whole organization to standardize processes and centralize the distribution network. (Chartered Management 2015.)

Changes, which are perceived, designed, planned and directed from the management board of a company, are defined as top-down change. The flow of the change is managed hierarchically from the top management to middle manager and non-managerial staff. This concept of change is a suitable approach for enterprises to ensure their strategies linear and consistent by individuals' acknowledgement. Notwithstanding, it is not a one-size-fits-all approach. The top-down change management is effective in leading the whole organization towards a sustainable vision and mission; however, different levels of an organization need to have their approach on working daily basis. (Ryan, Williams & Charles 2008.)

In line with top-down change management, transformational change also depends on organization leaders. However, out-of-the-box thinking differentiates why transformational change is flexible. The executives create and encourage space for their staff's creativeness. (D'Ortenzio 2012, 30.) Fortune business magazine has praised Satya Nadella, current Microsoft's Chief Executive Officer, for being a transformational leader. He has been restructuring the company to a higher level, where individual challenges aligned with common company goals. Nadella has proved that leaders who no longer wanted to run their own show, and the premium Microsoft is a show that is run by a team. (Nusca 2016.)

Strategic change management in D'Orenzio study is defined as the change formulated in a certain recipe. This type of approach focuses on changing the way of working of personnel in a company (D'Ortenzio 2012, 30). The changes occurring in a systematic, long term and vision-driven manner are labelled as strategic change management (Baker 2007, 17). Two models that are well-known using strategic change management are eight critical steps change model of Kotter in 1996, and three stages change model of Lewin in 1947.

Change management is divided into three, four, five, or even six different levels based on the variables of organizations. This study will focus on three common levels that always appears in any enterprise. They are individual, group, and organizational change levels.

Cameron and Green have written in their guidance of change management that “Individual is the heart of everything that is achieved in organizations.” Indeed, a big thing is always started from a small act. Besides, people are grouping to work in a team or department, and normally, they are sharing the same behaviors in handling daily work. At the highest level, an organization is a collection of several teams. (Cameron & Green 2012, 11-12.)

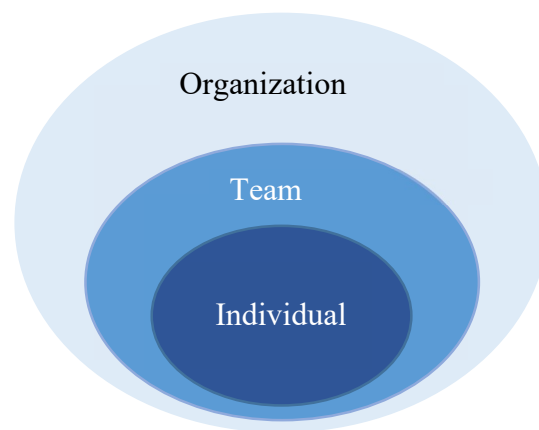


FIGURE 6. Levels of change (adapted from Cameron & Green 2012)

Individual change management’s definition is the transition of employees controlling their ways by provided tools, processes. There is a need to balance the change when and where is the demand for assistance, and how much is enough. Regardless of the diverse preferences of people, to direct change and get them to make those changes as personal developments.

“On Death and Dying” in 1969, a work by Elizabeth Kubler-Ross has introduced five stages of a person’s change process as depicted (FIGURE 7), including denial, anger, bargaining, depression and eventually acceptance. At first, a person will react to the change by their denials, in other words, they still do not want to take it as realistic ongoing activities. When acknowledged the change, people tend to see themselves as “the unlucky victims” of those external factors that placed them into a frustrating situation. Given the disagreement, they will start creating reasons not to change and, somehow, hopefully, rotate the situation. However, if the trial does not result any better, they will quickly fall into the depression trap and perhaps, moving out of it by “quiet” acceptance to the change. This model is widely used by many enterprises as a framework to compromise with individual changes. (Kubler-Ross 1969.)

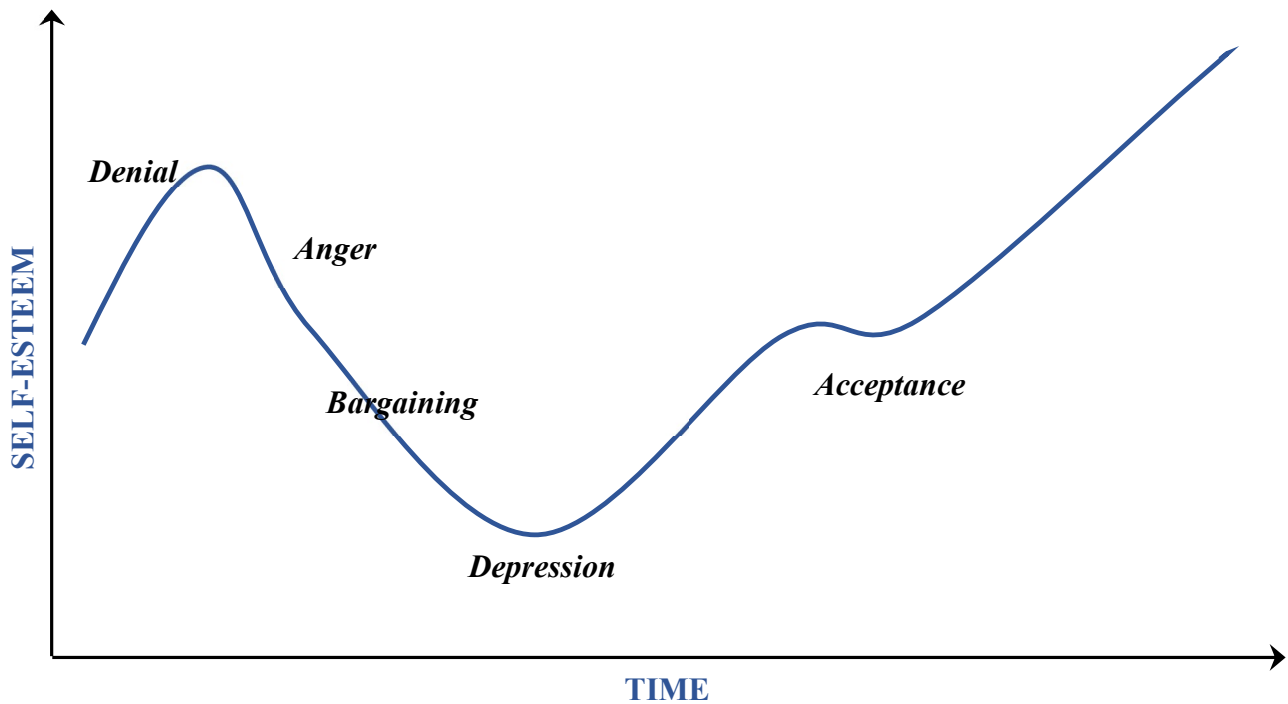


FIGURE 7. Process of individual change and adjustment (adapted from Kubler-Ross 1969)

Team is a set of individuals gathered into different types, namely project team, self-organizing team, virtual team, management team, matrix team, change team, and so on (Cameron & Green 2012, 69-70). Behaviors of each member in the team influence how the team adapts to the change. This level is also the place where strategies from the top are translated and broken down into smaller actions. Depending on how the team constructs and its purpose, “the mantra” of each team will vary. To the changes in organizations, different teams play unique significant and downsides.

Organizational change management (OCM) concerns to management level in enterprises. This change connected to the company’s business value and considered as a web of individual changes. The individuals bunched together to build an organization network using communications, training, coaching, sponsorships, and resistance management (Hiatt & Creasy 2012, 80). Especially, OCM occurs when an organization determines its strategy and transformations towards long-term development (Blokdiik 2008, 66).

4 CHANGE MANAGEMENT COMPONENTS

One of the core components of change management is stakeholder analysis, where stakeholders are respectively identified in groups and managed according to their needs. Additionally, two change reactions known as change resistance and readiness are being addressed to develop and review strategy for an effective change management plan. The change resistance concept is clarified to figure out the real sources causing resistances. Concerning the second change reaction, the most important aspects of change readiness will be discussed, and the readiness assessment plan will also be executed.

4.1 Stakeholder analysis

The theory Stakeholder was first introduced by Edward Freeman in 1984, referring to those who influence or are influenced by the accomplishment of the organization's target (Freeman 1984, 46). Human factors, for instance: change resistance, change readiness, organizational culture, project management have been proven to affect the success of an ERP implementation. This is since major problems with ERP are not usually technology-related, but they are more about human-related issues. Hence, roles different stakeholders within the organization are the key elements.

It is impossible to address needs from every stakeholder individually, so the solution is to group stakeholders for better interaction. This is carried out through stakeholder analysis, with a view to understanding stakeholders' expectations and needs from the project, thereafter, considering approaches to tackle project risks while delivering the best benefits. The objective of stakeholder analysis is to make sure risk assessment work and action planning are identified among groups of stakeholders (Archive SAP 2012). Another goal is to address the impact of the implementation project on stakeholders and vice versa (Galoppin & Caems 2007, 144).

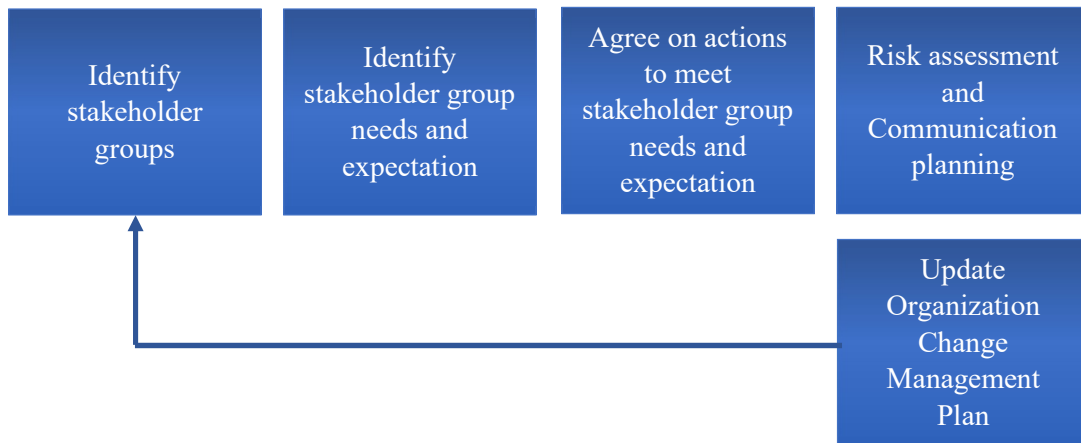


FIGURE 8. Stakeholder Approach (adapted from Archive SAP 2012)

As can be seen from Figure 9, there are internal and external stakeholders. Identification aims to make sure the right stakeholders are in the right groups. When this activity is completed, we can figure out for example which groups of stakeholders should be informed about the changes, which groups have same change problems, who are the most essential key external stakeholders, which groups should be received training or who will take ownership during the project, etc.

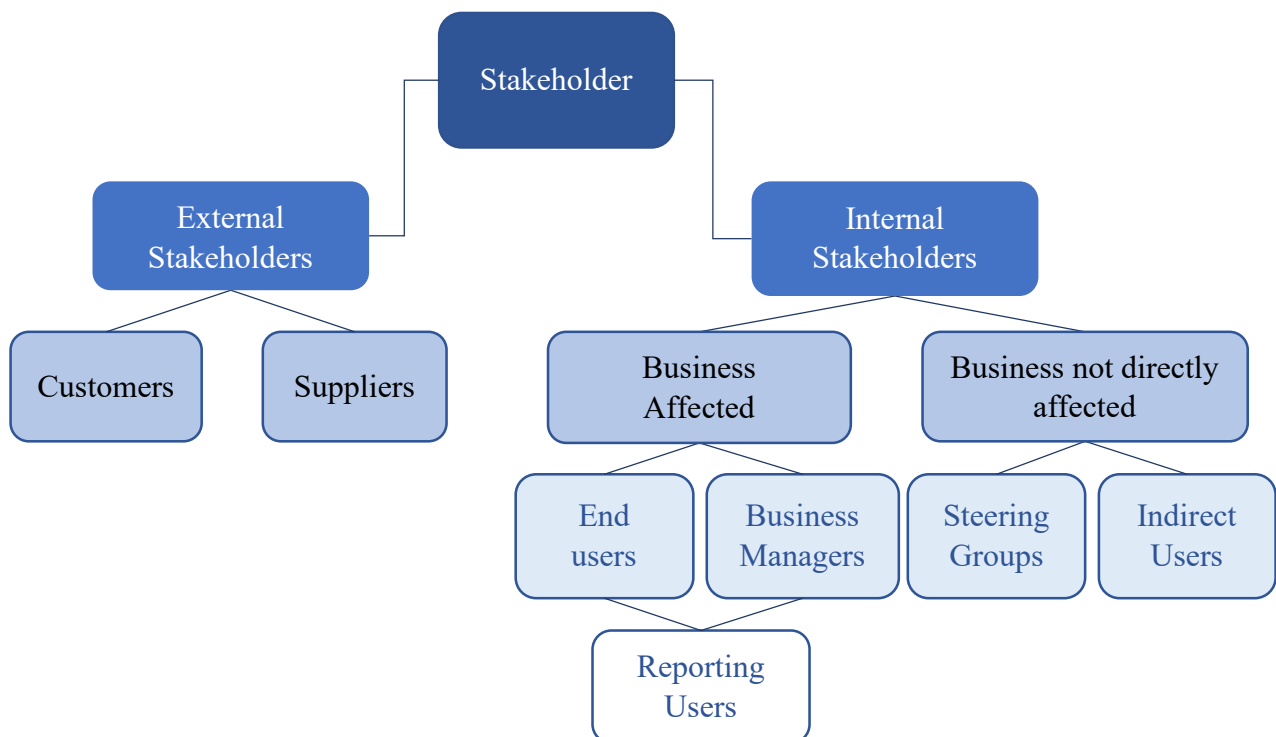


FIGURE 9. Example of Group of Stakeholders (adapted from Archive SAP 2012)

After determining stakeholder groups, the next step is to identify their needs and expectation from different project phases. This can be done through interviews with stakeholder group representatives. As a result, project team will be able to reach stakeholders' expectations on the new system/ components, communication stream, level of assistance from the project team. Additionally, it is easier to diagnose stakeholders' concerns or issues about the project. This helps to answers if they are opposed to the project or to what extent they get familiar with the project concept (Turner 2008, 78).

Particularly for end-users, they expect to understand the benefits and key project activities as well as undergoing proper training to adapt to the new system. From customer's and supplier's perspective, they need to be notified of changes in procedures in addition to what impact they get from the changes. Steering committee members must be informed of project progress and highly challenging issues while business unit managers are expected to deal with any issues that affect their business area.

The objective of this step is to manage stakeholders' needs and expectations on what could be and could not be delivered. Moreover, actions used to meet stakeholders' needs and expectations are confirmed. This enables organizational change management activities, namely: communication, leadership, business optimization, and project management.

As a result of previous steps, findings from stakeholder analysis are applied to risk assessment and communication planning. This ensures that every stakeholder gets involved, communicated and trained properly, even though not all stakeholder groups are able to be involved in the same phases (Galoppin & Caems 2007, 146).

The final change plan will inherit findings from stakeholder analysis, risk assessment together with communication planning to document all needed change materials. Those materials form an organizational change management plan where executed activities are confirmed and validated to measure their efficiency during ERP project implementation. Besides, feedback from stakeholders is gathered for further project improvements. The more visible the improvements are, the more credible the process is (Turner 2008).

4.2 Resistance to Change

The statistic studied by The Center of Creative Leadership shows that 66- 75% of change initiatives' failures are caused by change resistance (Kee & Newcomer 2008). It is claimed as the reason for making many managers and leaders frustrated to deal with (Kegan & Lahey 2001). Given the importance of knowing what change resistance concept is and from where it is originated, this part covers these aspects as follows.

4.2.1 Change Resistance definition

The term "resistance" in change management refers to the situation where employees are "stubborn." They insist on keeping their long-lasting habits in daily working style. Once something had become a habit, it also means people find it challenging to get rid of. Similarly, resistance includes anything and everything that workers do which managers do not want them to do and that workers do not do that manager wish them to do" (Coetsee & Flood 2013, 124). Generally, many studies have had the same conclusion, which stated that Resistance to Change is a critical issue causing the failure of change initiatives. (Bradutanu 2015, 11-12.)

In contrast, the opposite approaches to resistance are also valid. Jick and Peiperl [Jermier, Knights & Nord 1994] believe resistance is an information source to the change process's input. The reason for this statement is the innate characteristic of self-protection from people. (Jick & Peiperl 2003.) To Lewin, "Resistance" plays a role as a force and having an opposite pushing relationship with the "driving forces" group, which triggered the changes by internal and external factors, as depicted in figure 10. In other words, people tend to push back when getting depressed. If there is an imbalance between those two groups of forces, changes will occur.

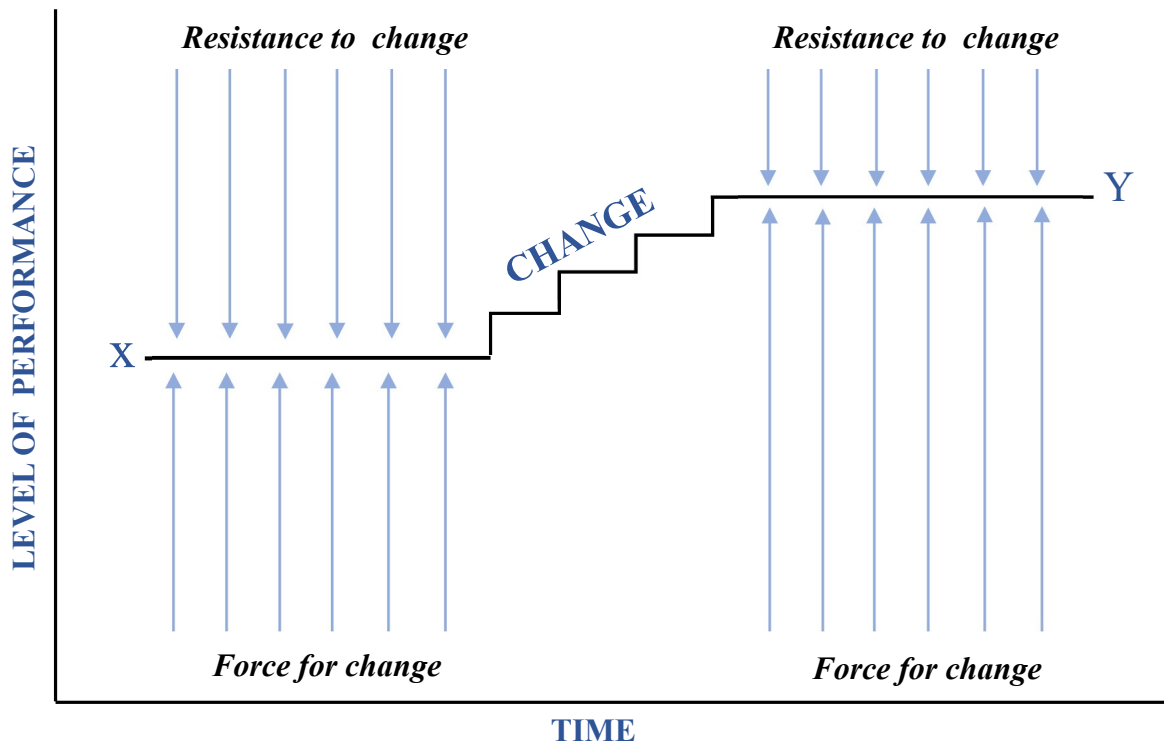


FIGURE 10. Kurt Lewin's Force-field theory of Change (adapted from Lewin 1951)

4.2.2 Change Resistance sources

For change leaders to tackle and control resistance, in the first place, they need to know the possible sources from where resistance arises. Parallel with different levels of change as illustrated (FIGURE 4), resistance is originated from those three levels, namely individual, group, and organization. Each level obtains different reasons and requires a unique way to approach.

According to *Leading and implementing business change management book*, written by Jones and Ricardo, they have classified resistance sources into two groups, which are intrinsic and extrinsic ones. Extrinsic sources of resistance refer to change agent's activities, generally related to communication channels, formal and informal. (Jones & Ricardo 2013.) As explained by Bradutanu, employees tend to be surprised due to the sudden characteristic of change decisions. The first reaction against anything that they have not been prepared or involved in decision discussion is unavoidable. Besides, the lack of relevant information and misleading messages translation from change communication channels are the reasons that trigger change resistance. (Bradutanu 2015.)

In terms of intrinsic sources, they are more on the side of inborn behaviours. They lie under many types as listed (TABLE 4) but mostly belong to people's anxieties and appear when people encounter the change at the start of its process. Affect dramatically is the fear of loss categorized into loss of comfort, loss of status, loss of pay. As a common phenomenon in an ERP implementation project, the users, especially super users, must balance As-Is works as well as project tasks for To-Be scenarios. That means people get to double their working capacity to secure the current business and progress for the change. None of the employees want to handle more tasks, but their salaries stay the same or being demoted if they do not have a certain level of knowledge for the new ERP application. If the leaders neglect this source, resistance will tend to become another form of unrealized risk, which causes a considerable consequence afterward. (Bradutanu 2015, 31-42; Jones & Ricardo 2013, 84-85.)

TABLE 4. Types of intrinsic sources of unrealized change resistance (adapted from Jones & Ricardo 2013)

<i>Types of intrinsic sources</i>	<i>Example</i>
Fundamental fear for the unknown	Discomfort with uncertainly and not knowing how things will turn out after change, including how to adapt to a new environment
Overwhelmed	Things moving too fast on the change initiative (in contrast to the milder pace of routine operations)
Impatience	Things not moving fast enough towards a conclusion in a linear, predictive manner
Information overload	Too much information and unfamiliar detail outside of existing roles to process in a short period of time
Fear of loss	<p>Work-related. Do I have the resources and power that I will need to get my job done in the changed environment? Will I have a job?</p> <p>Relational. Will I lose my colleagues and allies I was comfortable working with?</p> <p>Personal. What will my identity become once the change is over?</p>

The explanation for what causes resistance at the organizational level is accounted for the company culture, lack of managers' involvement, and insufficient resources. Every company has its unique values and norms. Those are like "secret-agreements", forming a standard behavior between person to person

in the organization. When a disruption appears due to the change and somehow tackles the value and the norm, employees will react by showing resistance. (Bradutanu 2015; Tirrell 2013.)

Not only employees, but managers' performance contributes to the born of resistance as well. As illustrated in Top-down change management type, the change process from the top management to non-managerial employees must go through many layers of middle and bottom managers. The change's vision and message are easily translated wrong. Furthermore, if the managers are not aware and being available for correcting and aligning employees' when something goes differently, resistance is inevitable.

A change requires the strength of resources in capabilities, time, and capital. However, due to the limitation of the financial budget for ERP projects, people resource could not perform as they wish. The need for training is always high to get them trained for certain types of tasks, functions, or even new technologies. More than that, if there is a lack of personnel, one person takes over a double or triple workload at the same time. Resistance is expected to occur. The organization, when making a budget for change, should pay attention to this aspect to prevent project failure due to this source of resistance. (Bradutanu 2015.)

4.3 Readiness to Change

The term change readiness was rooted in Lewin's three-step change model in 1952. One of the most accepted change readiness descriptions is from Armenakis, Harris and Mossholder (1993) in which dimensions of attitudes, beliefs, and intentions measure employees' response to change. Nowadays, change readiness, described as Harvard Business Review is "the capability to continuously establish and interact with change in ways that generate benefits, lower risk, and support performance" (Musselwhite & Plouffe 2010).

Research has shown that the primary reason for ERP failures is due to users' resistance (Lapointe & Rivard 2005, 461-491). It has been said that even if an ERP technical implementation is successful, the ultimate success lies in employees' willingness to perform on the delivered system. Accordingly, readiness for change serves as a helping hand for decreasing change resistance. When it comes to transformation, change readiness has been found vital, as reported by The Ministry of National Defense in Canada.

4.3.1 Five aspects of organizational readiness for change

As Armenakis (1993) mentioned, the core of change readiness is revealed through individual cognition transformation across a set of employees. On that account, the people factor is crucial, and their readiness perception needed to be accessed individually before changes happen. Our thesis is going to address the main elements for organization change readiness, namely: perception to change efforts, trust and respect, change initiative, leader support, and change acceptance (Susanto 2008, 51).

Human's perception concept has been reflected in tales and stories ages ago. Once upon a time in a distant village, six blind men had never come across an elephant. One day, they had the opportunity to conceptualize the elephant by touching it. Each man touched a different part of the animal and claimed that this was how the elephant looked. One who felt its ears argued the elephant had the shape of a fan. Another touched the tails and debated the shape as a rope. Everybody got satisfied with their ideas, and eventually, they fought against each other. What we learn from this Indian parable is that people need to communicate and respect different perspectives since humans have the nature intention of claiming truth based on their bias, even other experiences may be right.

Concerning the case of change management, it is about perception when employees decide whether to share the same change vision with their organization. It goes without saying how perception can drive success or failure of the entire organizational change efforts. Dr Dawn-Marie Turner has proposed three ways in how perception can influence change efforts as a belief about change, the value of communication efforts, and willingness to act. Regarding change belief, if employees recognize change as a threat, then they are reluctant to welcome changes as opportunities. This can also be affected by the employee's past experiences with organization change history or capability. The value of communication efforts is shown in how information is delivered as two people can listen to the same speech yet perceiving in two different points of view. Willingness to act means that employees believe in their competence to take action, which is also known as perceived capability (Turner 2018).

A study has found that even the best change management plans struggle without the building of trust and respect. Trust and respect could be built from top to down, meaning from executives to workers, or it can be built among co-workers. From the change managers' perspective, they need to make sure trust and respect belong to the core component within the organizations. In Stanford's recent work of *Breaking the cycle of failed change management*, the author indicated that relationships built outside the change window could cultivate trust, hence enhancing employee's change readiness (Stanford 2017).

Standford's research on the creation of trust has resulted in four conditions evaluating organization changing at its fullest potential (Manning 2018). The first condition is regarded as trust is evident. The second condition identifies that alignment is actualized. The third one shows that processes support people. The fourth analyzed cohesion is created by clarity.

It is psychologically proven that humans naturally resist changes, which makes championing change even more challenging. To promote everlasting survival chances, organizations should accelerate change in an ethical manner (Stadtländer 2006). It is important that all individuals of the organization are willing to initiate essential change because the cooperation of individuals is the key to get transformational started (Kotter 1995). By offering individual the freedom to engage their passion, desire, heart and head, they will eventually come to the stage of recognizing the innate value to future professional success from changes. Once people start to make their judgements about change value and perceive it in a positive way, this is a sign of successful change effort.

Regarded as a determining factor for a successful ERP implementation project, with no doubt, management support also plays an indispensable role in change management. The way employees observe organization's readiness for change depends on the supportive level in organization's policies and practices concerning changes (Armenakis et al.1993). Hence, a supportive change policy, including excellence recognition, reward and compensation based on employees' attitudes and performance can accelerate the change process. Additionally, management support is reflected in efficient change leadership with the involvement of mutual trust and shared vision between leaders and followers. Managers should pioneer in proposing necessary change and showing their confidence in dealing with obstacles during the change process.

Here comes the stage when the need for change is eventually understood, and individuals are adapting to change the environment. They are ready to tackle any change issues. Even though not everyone is going to perceive the benefits change can bring since advantages fail to arrive immediately, a concrete change plan under management supports and change agent will certainly help to increase change acceptance level among individuals.

4.3.2 Change Readiness Assessment

Change readiness assessment focuses on analyzing the levels of an organization undergoing change based on three key elements as attitudes, resources, and conditions. Attitudes indicate how people show a reaction to change. Resources concerns any matter that facilitates changes, for example, time and budget. Conditions are laws or organization's change policies to enforce the change.

The purpose of this assessment is to provide knowledge and assurance of success in an organization's proposed endeavor if they decide to operate in that direction. In general, readiness assessment addresses the change itself, the people, and organizational capabilities. In terms of the changing scope, it is essential to define change impact, risk assessment, training, stakeholder involvement, and cultural impact. Regarding personnel, areas such as culture, leadership, and organizational change management should be taken into consideration. Organization capabilities do not only deal with technical capability or system capacity and infrastructure, but it also regards human resources factors.

Change readiness assessment can be conducted in the form of questions, which is then integrated into surveys, meetings, interviews, or requests for feedback. In a nutshell, the assessment helps to clarify, for instance: employees' technical capability, organization reaction, and the mechanism of change. This helps to enhance the entire project result, prevent breakdown, and promote strategic decision making.

4.4 The way forward

An exciting description of a software implementation project has been written by Krigsman under his article for ERP research (Krigsman 2003). He mentioned that software projects are not merely technical endeavors because they involve elements such as political, financial, emotional, structural, strategic, process, and people-centric initiatives. Unless you want to ruin the whole project, then you should take all dimensions into thorough consideration. ERP change management is also seen as a transformational business process improvement (Ultra Consultants 2019). Resistance to change, as usually occurs in any complex implementation project, is not an exception. The best solution change leaders could do is to expect resistance to come while setting up a proper preparation and management plan to minimize the resistance impact. Furthermore, organizations need to put the change management process as a top priority.

Hale from Software Advice proposed eight principle drivers for a successful ERP project. First and foremost, project scope and specifications are needed to set clear from the start. Secondly, there is a great need to assemble a team of IT experts and critical stakeholders who belong to the steering committee, project managers, consultants, and critical users. Next, when it comes to impacts that changes bring about, everyone must be kept informed, empowered, and willing to face the changes. The fourth element is to establish a reasonable budget specializing in initiatives such as system upgrades, overtime pay, or outside costs. Another core component is recognized as the data migration process, which consists of data cleansing, connection mapping, and migration process testing. Tailoring training into individual needs, combining different training methods, and promoting continuous training even after implementation is likewise fundamental. Following is a go-live strategy that is not only composed of communication strategy but backup processes and testing. Evaluating results with key performance metrics is the final step. In this evaluation, workforce productivity, client satisfaction, generation of revenue are being addressed. (Hale 2018.)

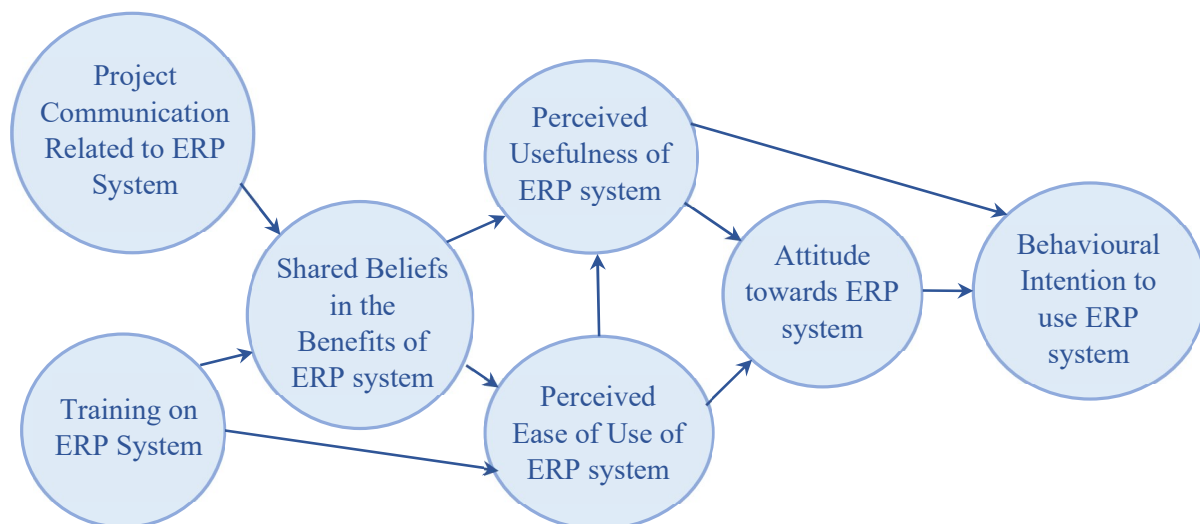


FIGURE 11. Technology Acceptance Model in ERP environment (adapted from Davis 1986)

Technology Acceptance Model (TAM) defines how users come to accept and use technology. This model was developed by Davis (1986) based on the theory of Reasoned Action. There are two major factors influencing users' decisions, notably perceived usefulness (PU) and Perceived ease-of-use (PEOU). Davis explained PU as a degree to which employee believes the use of the technology system will improve their job performance. PEOU represents users' belief in effort-free when using a system. Gyampah has extended TAM model in an ERP environment which recognized two broad technology

success factors as training and communication. Regarding project communication, it can make an impact on users' shared beliefs of PU and PEOU.

Suggested from Aladwani's framework for managing change in the context of ERP implementation, hands-on training serves as a key driver for the success of ERP projects (Russo, Kremer & Brandt 1999). There is no doubt that training provides users with knowledge, experience, and confidence when it comes to changes. When users are confident in their capability performing and adapting to change, they are showing more positive attitudes toward the system. Without investment in training programs, organizations will sooner or later end up having costly mistakes.

Oracle university blog has revealed their approaches to prepare for an ERP training plan. The first step is to align training with change management strategy, which highlights the role of change management in accelerating adoption and reducing risks. The following approach is to assign role and process-based training for practical training. In practice, each user should firstly receive pieces of training that are most relevant to their functions and processes. Organization-wide training then occurs from top to bottom, including executive and top management, project teams, functional users, and end-users. A report from Aberdeen Group shows that the top performances are more likely to apply ERP training into their daily business processes. The next step is to allocate the training budget stood on training needs. It is a common issue for organizations that they are stressed out about the training budget. However, there are findings from IDC Learning Services Research that organizations achieve nearly 20% of investment yields better results from 15% of their total ERP budgets on training.

Additionally, training is not supposed to be done in a one-time session because ERP is not a "set and forget" tool described by Aberdeen Group report, which means it requires continuous training and learning strategy. One typical question arose from training is who could be responsible for training the organization. This is where experts can assist with organization training plan. They are experienced education consultants who can build a training plan and draw a change management strategy depended on each organization's business scope and scenario. (Purr 2015.)

5 CHANGE MANAGEMENT FRAMEWORKS

Change management framework is described as a structure or process for people to follow when their organizations are undertaking a change plan. The adopted change management framework can vary differently, depending on the characteristics of each organization. The following addressed change management frameworks gain its popularity due to its simplicity and efficiency. The purpose of evaluating these frameworks is to answer the thesis research question if there is any universal change model designed for organizations while implementing ERP.

5.1 Kurt Lewin's three-phase Change Model

Kurt Lewin (1890-1947), the father of modern social psychology, is the author of the famous three-step model of change. This work of his was originated and developed in the mid-1940s. Lewin's change model is the most simple, practical, and widely used to approach change management. His life-long change model consists of three steps, namely unfreezing, change, and refreezing as drawn (FIGURE 12). To our perspective, the change management approach can be considered as reforming an object. Specifically, this object is a frozen liquid one. Followings are the steps to walk us through the re-shape process; likewise, a change management process, according to Lewin's brilliant model.

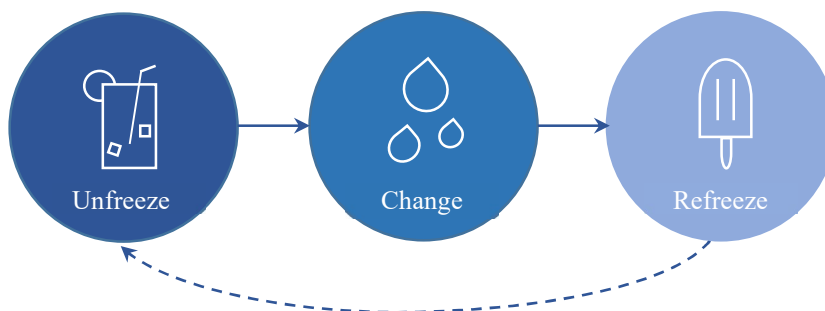


FIGURE 12. Kurt Lewin's three-step organizational change management model (adapted from Schultz 2011; Lucid Chart Content)

This step was said to be an object reforming preparation. To different types of objects, there will be a certain way for reforming. In this case, change for liquid frozen ones, defrost action is required. Similarly, the change management process must include the unfreezing step to get people aware of the current

situation. In a company area, the case covers old-fashioned ways of thinking and working style. Moreover, this is the As-Is stage of three elements organizational structure, process, and technologies. The managers use this step to involve people from the early stage of the change. Furthermore, to change agents, this is one way to create a good connection with users and obtain a chance to be in their shoes for understandings and better analysis. Therefore, resistance to change is lessened if this unfreezing phase is carried out properly. (Murthy 2007, 76-77.)

At the end of the previous step, the frozen object has become a pure liquid texture. This is the time to add up the flavors. However, transforming the taste, quality, or nutrition needs a suitable recipe. Aim for the best use of the object; the receipt could not be done with carelessness. Reflect to change, its strategy, a plan must be made in consideration of the realistic environment and strategical direction. With the change initiative has been made, people start to follow and change. To Lewin, change is more in individual and organizational culture perspectives (Ha 2014, 26). Changing company culture is the starting point of other changes related to technologies, processes, and organizations.

Once the content of the liquid mix reached the standard, it is ready to be formed in the desired shape and refreeze. For change management, stabilize is the focus of this phase. This is to ensure the new change is safe from regression and no return to the old behavior (Sarayreh, Khudair & Barakat 2013). Another aiming of the refreezing stage relates to harmonizing within the whole group or organization. Lewin stated out when the group value and norms changed, the individual will also follow. That's the reason why the change should be refrozen after delivered to the group or the organization. (Cummings & Huse, 1989.)

Studied by John Roland Schultz, each phase will have relevant actions summarized as in table 5 below. The list of nine actions enables the managers to navigate where they are and what to do. This action frame is visible, easy to understand. It also brings flexibility in using those steps since they are stand-alone and can be adapted to any situation that needs change. (Schultz 2011, 10-12.)

TABLE 5. Summary of the three-phase framework and accompanying action steps (adapted from Schultz 2011)

<i>Three-Phase Framework</i>	<i>Action Steps</i>
Unfreeze Make the need for change obvious so people are aware and ready to move in a new direction.	1. Explain the need for making improvement. 2. Communicate a unifying purpose. 3. Identify formal and informal networks and ensure their participation.
Change Active plans and actions that will move the system from old behaviors to the new ones.	4. Create a plan for action 5. Create the opportunity for small but meaning gains.
Refreeze Lock new patterns into place to reduce the tendency of sliding back into the old familiar patterns of behavior and work.	6. Empower people to <u>take action</u> . 7. Manage resistance to improvement. 8. Complete the restricting of daily activities. 9. Sustain improvement.

Affection is the second following step to make an impact on users' attitudes. Porter [1985], as a marketing intellectual, proposed a low-cost strategy helping enterprises going through a competitive environment. This strategy was adopted by Aladwani to implicate ERP implementation project. The goal of taking Porter's model in this phase is to keep the cost of users' adoption low, hence convincing users about the positive outcome of the adoption process and promoting opportunities in their jobs. Since affection considers users' feelings, so the more positive users feel, the more likely they show acceptance and adoption to the new system.

5.2 The implementation program of Luc Galoppin & Siegfried Caems

As stated clearly, ERP is the tool to improvise the strength of business in a faster way and to deploy ERP into use; it involves changes in organizations. Galoppin and Caems introduced an implementation program to blend changes and ERP project in an organization at the same time evenly. Their program emphasizes activities and deliverables in project and organization change streams throughout different

stages of a program lifecycle. According to Volvo Group's Senior Vice President of Processes and Systems and CIO, Scott Park, we have introduced a structural and practical approach to change management, which ideally keeps the ERP project's success reachable (Galoppin & Caems 2007, 19).

5.2.1 Program Lifecycle

Program lifecycle is introduced by us, including not only phases throughout the project but also the ones after finishing the project. The phases are placed sequentially by Program Initiation, Program Setup, Design, Build, Test, Deploy and Post-implementation. Furthermore, the cycle is prolonged by adding the Life after implementation activities. Figure 13 depicts an overview of how a program lifecycle looks like. As illustrated, there is not complete completion of a phase once the whole project is finished. Each phase of the program is kept continue regardless of the ongoing next and the previous steps.

Start with Program Initiation, this phase consists of the first and most critical set of activities for directing an ERP implementation project to success afterward. The program manager is assigned in this phase and to conduct a study of As-Is scenarios building up a business case. From the study, business needs are translated into specific requirements for the upcoming-chosen ERP to provide. Not only solution solving the As-Is issues but also long-term benefits of using the ERP system are taken into consideration for the decision. Along with business scenarios, the analysis of the company's organization, communication, learning, and performance have also occurred. Particularly, stakeholders mapping, sponsors readiness, targets are defined. Program manager follows the company's vision and strategies in order to identify the need for learning and leadership levels to be fulfilled. (Galoppin & Caems 2007, 133-157.)

Once the company got their belief in the ERP system with its provided potentials based on a prior analysis in the Initiation phase and decided to implement it, this is the time for planning or called Program Setup. The ERP implementation project's strategy is transformed into a visible plan and tasks. There is a long list of activities positioning in this phase. The organization starts with forming up the organizational structure to project portfolio, project charter with scope, detailed timing, deliverables, and milestones for the following phases. The implementation team is schooled with ERP system consultants. In addition, resource definitions and allocations are determined to be in line with a budget plan. (Galoppin & Caems 2007, 159-185.)

As its name, Design, the characteristic of this phase's activity related to drawing up solutions for As-Is situations. The steps can be spelled out as data collection, system orientation, prototype creation, user roles definition, and ERP process procedures documenting. At the same time, budget, timing, and goals will be reviewed and adjusted to stick with the real project. Training for ERP system users takes place in this time with the implementation project team, who has trained from the previous stage. The training flow typically goes from system super-users to basic users. The organizational strategy is determined during this phase. (Galoppin & Caems 2007, 189-235.)

Move on to Build, this phase aims to deliver the prototype for the entire system; however, it is not meant for a completed development in the system. From the gaps analysis in business requirements, ERP implementation team needs to adjust system configurations according to those business specifications. Overall, this is for the organization to carry out system customizations, data correction for migration and user training. (Galoppin & Caems 2007, 237-260.)

Like Build phase, the Test phase determines for a certain percentage of the project delivery, not the whole functioning system. For instance, approximately 20% and 80% of data are tested during two critical tests UAT and ORT, respectively. Test scenarios are drawn out in advance for the test with specific products, transactions, processes for all areas in the company from product management, sales management, purchasing management to manufacturing management, inventory management, logistics management, and finally invoicing management. Testing here involves system functions, process integrations, reports, and document handlings and users' using system abilities. These need to be tested and tracked properly to recognize the shortcomings in the above areas or errors to be fixed. If the company could perform the test in detail and systematically, risk would be eliminated when go-live. (Galoppin & Caems 2007, 263-286.)

After the confirmation of a prototype is delivered, then so it is time for Deploy phase. In other words, go-live is the stage when moving from the test environment to a production environment and this stage becomes available for users. Before going live, data migration must be done entirely for all final validated data. At the beginning of the go-live, there might be running parallel between the old and new system, until the go-live is signed off, then reassignment of the old system is good to go. Moreover, proper planning for go-live is vital to minimize disruptions during go-live. Plan activities are listed with scheduling personnel for supporting while going live, communication channels for downtime, alert, and support needed. At the same time, training for users is kept going on for deeper understanding and confident performance with the system. (Galoppin & Caems 2007, 287-309.)

Right after the Deploy phase, here comes the Post-Implementation. To this point, the implementation team has done their project jobs successfully. Their responsibilities are shifted to a different perspective involves system adjustments, change configurations, and user supporting. With a different set of skills and roles of project team members, each person takes over the tasks of assisting relevant areas to figure out the existing issues and tackle them. KPIs of this phase is different from the previous ones. It is more on the way forward, which sharpen the results to align with the prior drawn goals of the implementation project and strategies of the company. (Galoppin & Caems 2007, 313-330.)

Life after implementation is the period which could not provide a well-defined timing of the program completion. The project had closed, but the program. It requires the proficiency of using the newly deployed ERP system from users, and it takes time. However, the benefits are apparent once the user takes the system as a normal easy part of a daily working basis. From there, users are influenced by the convenience and advantages of the system and be able to tackle the next level of maximizing and utilizing system functionalities. Business Intelligence is involved in the development of the system at this stage. It assists managers, users to catch the trend of business areas, spot out issues quickly, and provides suggestions to enhance the quality of decisions. (Galoppin & Caems 2007, 331-339.)

5.2.2 Project Streams

Implementing ERP is not just a new software system; it is more like a culture change (Gale 2002). In addition, Dr. Shanne Hodgson, as an organizational change management Principal has identified ERP implementation as a business transformation, instead of a mere IT project (Hodgson 2010). To drive this transformation to its fullest potential, it is essential that executives can create core groups of activities. These core groups are shared across the organization to ensure every department adapting the same operating practice and avoiding wasteful effort duplication (Segars & Chatterjee 2010). The objective of the ERP implementation stream is to design, build, and implement the ERP system in a manner that fosters a new approach of working together with interface development and data migration.

To carry out the ERP implementation project, there are smaller break-down sub-steps related to IT/IS stream contributing to the project. These steps can be named out as hardware, software, and networks. Specifically, the company needs to have knowledge of IT requirements before choosing an ERP system. It involves client software connected to application servers and database servers. In addition, at the

premise, there will be a demand for a certain number of computers, printers and other devices. This stream concerns as well the installation part of the infrastructure to be ready for ERP taken into use. (Galoppin & Caems 2007.)

Without the stream of testing, the implementation project is highly likely to face failure. There are two fundamental types of testing in ERP implementation, namely the User Acceptance Test (UAT) and Operational Readiness Test (ORT). The key in UAT lies in “users” because they are the ones who use the system regularly and determine whether the software is accepted. In a nutshell, UAT is a verification that a solution works for users or clients. The primary goal of ORT is to affirm that the system is used to end-users and intended business functions are validated against business requirements. As a testing strategy for software, ORT is usually executed at the final testing stage, sometimes referred to “Pre-Go Live” test, specifically when the other testing activities have already been performed. ORT aims to guarantee correct configurations on the production system, particularly database, server, and code deployment. Developers, testers, and system administrators are the ones who get involved in the ORT process (Shah 2014).

Technology Evaluation Centers classify testing techniques into three types: functionality testing, performance testing, and integration testing (Technology Evaluation Centers 2019). Each type represents a different functionality aspect of the system and must be handled as a separate track. Functionality testing helps to certify that all business figures including software and hardware, are being tested. This technique is achieved through the creation of test goals and objectives (Wedell 2018). Performance testing examines ERP capability and responsiveness to perform tasks during high demand scenarios such as big data flows and transactions. It can also highlight where the application might fail or lag by locating bottlenecks within a system (Rouse 2007). Finally, integration testing addresses how well ERP system can comprehend in an organization’s real business scenarios, which ensures smooth operation within components and modules.

The purpose of choosing an ERP system is to obtain a tight integration of all processes, organization, and process into a whole operation. That makes Integration Stream becomes essential throughout the program lifecycle. During the project, this stream ensures the smooth internal integration within the organization from process to process, technology to processes, and organization. Moreover, the integration expands to stakeholders, links outside partners to the inside organization process. After completing the project, this stream is also used to re-consolidate resources to the organization. (Galoppin & Caems 2007.)

Like other projects, program management is needed for monitoring and controlling of an ERP implementation project. Program management is not project management; it is a higher level above project management and involves further stages after completing the project. Project requirements are defined as program management. A standard program consists typically of huge elements fitting the project into the planned scope of time and budget. They are financial budget allocation, resource management, quality assurance, risk management, progress updates, and performance management. Generally, for a continuous changing, it is vital that the organization have a program management to manage the change and benefit directly to the organization. Once the program management sharpens the project following the path of company strategies, then the company has successfully playing program management. (Galoppin & Caems 2007.)

5.2.3 Organizational Change Streams

There are four fundamental organizational change streams. To be specific, they are communication, learning, organization, and performing streams. Communication is vital for ERP implementation projects. When describing this vital element as one of the social constructions of a new reality, Galoppin and Caems (2007) also included leading communication activities such as target population segmentation based on a database, communication channels, and the creation of a platform to interact. Specifically, communication stream undergoes different phases of a project, from Program initiation addressing a matter of stakeholder analysis and sponsor readiness to program set up where the needs for communication are analyzed, and strategies are defined. Through the Design project phase, a communication plan is prepared while the stakeholder database is being built and used. The Build phase deals with value proposition clarification, test phase concerns with pacing organization and deploys phase aims to centralize communication as well as agreeing on post-go-live communication. Under the Post-implementation phase, communication strategy is evaluated, and lessons are learnt. The goal of the communication stream is to minimize resistance among employees and organizations. (Galoppin & Caems 2007.)

Learning is different from training. Learning streams help individuals within an organization answer three major questions on why they should learn, what they should do and how they can do that. This is achieved by building communities of knowledge promoting knowledge sharing among people and eventually training organization. It is crucial to differentiate target, define roles, and match roles to learning

objects. In the later project phase, learning is evaluated, and the success of the learning stream shows when learning materials are integrated into the work environment.

To Galoppin & Caems, the organization stream throughout the implementation project is to adjust the structure of the organization and standardize the new working process. Once the technology is leveraged, but people and processes are making no headway, the whole project will be dragged down. Indeed, the purpose of deploying an ERP system is to streamline processes, automate manual jobs, so to use it, and the current working way must be adapted.

The organization stream is initiated with program manager and the team assignment. In the Program Setup phase, they introduce program charter, which developed a business scenario and pick doers for different tasks and areas. Also, Process Owners of all areas are defined in this phase. Organization stream comes crucial in the Design phase since many activities to form processes, identify gaps, and build solutions will happen in it. Along with solutions, report templates are validated and corrected to fit the use of the company. After defining the solution, Build is the time to apply those into the system by carrying out some samples of each function to the whole workflow. And those samples of scenarios are being tested in a Test phase with details trackers. Each scenario will consist of the flow integrated by many processes. All reports and documentation relevant to the processes are brought into testing as well. Once a green light is set from the test result, then the organization is competent to deploy the tested solutions in Deploy phase. The deployment team is now formed to work on the whole deployment tasks to the point of reaching deliverables that, to some acceptable extends, ready for planned cut-over. Cut-over is a vital step of the organization; it finalizes the transition and gives the Go-live with less issue if Cut-over is a well-planned one. The preparation for external stakeholders of the company changing is officially started at this step. After deployment, the organization moves to Business Intelligent focus to maximize the capability of the organization and utilize the use of a newly deployed system. (Galoppin & Caems 2007.)

Performance Stream is meant for adjusting the system of performance evaluation and measurement throughout the ERP implementation project. Each phase of the cycle has its relevant achievements set for the steering board to rely on when reviewing the project. For instance, in the stage of Program Initiation, a framework with criteria of what a company aims to achieve during the project will be formed with an overview, including elements, factors, and levels. Moving to the Design phase, KPIs speak out for the performance. In order words, it depends on the different departments as well as jobs specific, and the benefits are transformed into KPIs. And in the next phase, Build, KPIs are modified to be more

realistic and suitable to the business strategies. At the Test phase, the performance focuses entirely on business scenarios testing. It is critical to set the goals of testing since testing places a huge role in influencing the errors' elimination and the success of the project ultimately. From the Deploy phase towards phases after implementation, KPIs is built up, and its model building activities are the centre of attention to ensure the company going forward as the drawn vision and strategies. (Galoppin & Caems 2007.)

5.3 The combination of ERP project phases and change cycle in one model

Galoppin and Caems have successfully put three steps of change and ERP implementation project phases into a big picture as figure 13. Not to mention, deploying an ERP system carries the meaning of changing organizations. ERP project is not purely an IT project. Instead, it changes the working way by applying advanced software. So, people, process and technology changes involve (Panorama 2019). Those different dimensions make the project become complicated. The study of Galoppin and Caems pinpointed this significant must. They have successfully combined a change project and ERP implementation program into one with constructive tasks and deliverables, and it guides leaders in the right direction to approach.

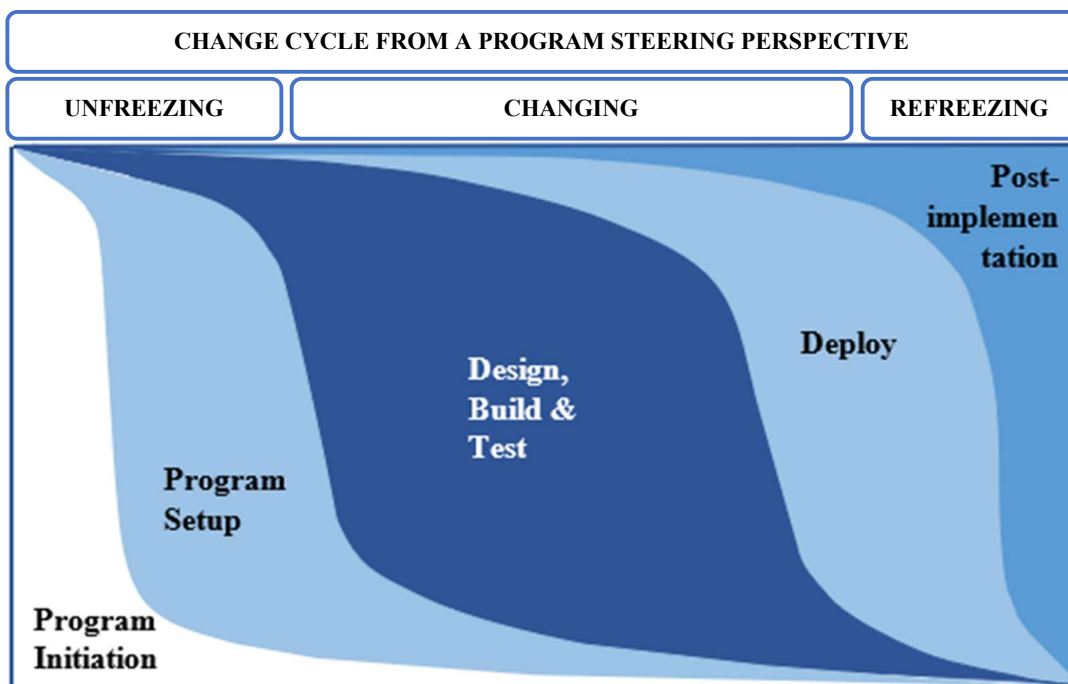


FIGURE 13. The combination of three-step Change model and ERP implementation program (adapted from Galoppin & Caems 2007)

Each phase of the project fits a step of the change framework. Program Initiation and Program Setup are placed in the Unfreezing. In this Unfreezing period, the organization is in preparation in terms of creating a conditional environment for the desired changes. Moving to the change actions, the Changing is a package of Design, Build, Test and Deployment phases. Once changes are implemented, Refreezing wraps the program up with Post Implementation and Life after SAP, this is the finishing part, which “locks” the results of the changes to ensure the organization will be “frozen” in the made standards. (Galoppin & Caems 2007.)

Underneath of the ongoing program is the streams’ flow. These streams belong not to only the ERP project but also the change lifecycle as presented in item 5.2.2 and 5.2.3. A keynote in running these streams is to align them in the project. A well-known Nigerian proverb, “a single tree cannot make a forest,” it is applied in this case, the project could not succeed if there is only one stream’s objective delivered. The success can and only be reached once those streams are well connected for the organization’s benefits. (Galoppin & Caems 2007.)

6 QUALITATIVE RESEARCH METHODOLOGY

Qualitative research methodology aims to provide data non-numerically. Data gathered from the qualitative research method are not adaptable to measuring or counting. Through this type of research methodology, information that is based on opinions, beliefs, or preferences could be revealed in a focused topic by key informants. Interviewing with key informants is described as qualitative in-depth interviews (UCLA Center for Health Policy Research). Key informants refer to experts, community leaders, or professionals who have unique knowledge or understanding of a topic and provide researchers with insights and recommendations for solutions (Steber 2018). To be more specific, carrying out interviews in qualitative research is described as a conservation research method. The purpose is to obtain information on conservation issues as well as values and decision-making processes from key informants for research design and output. (Young & Rose 2017.) There are three main stages in the conservation research method, respectively, interview design, data collection, and data analysis.

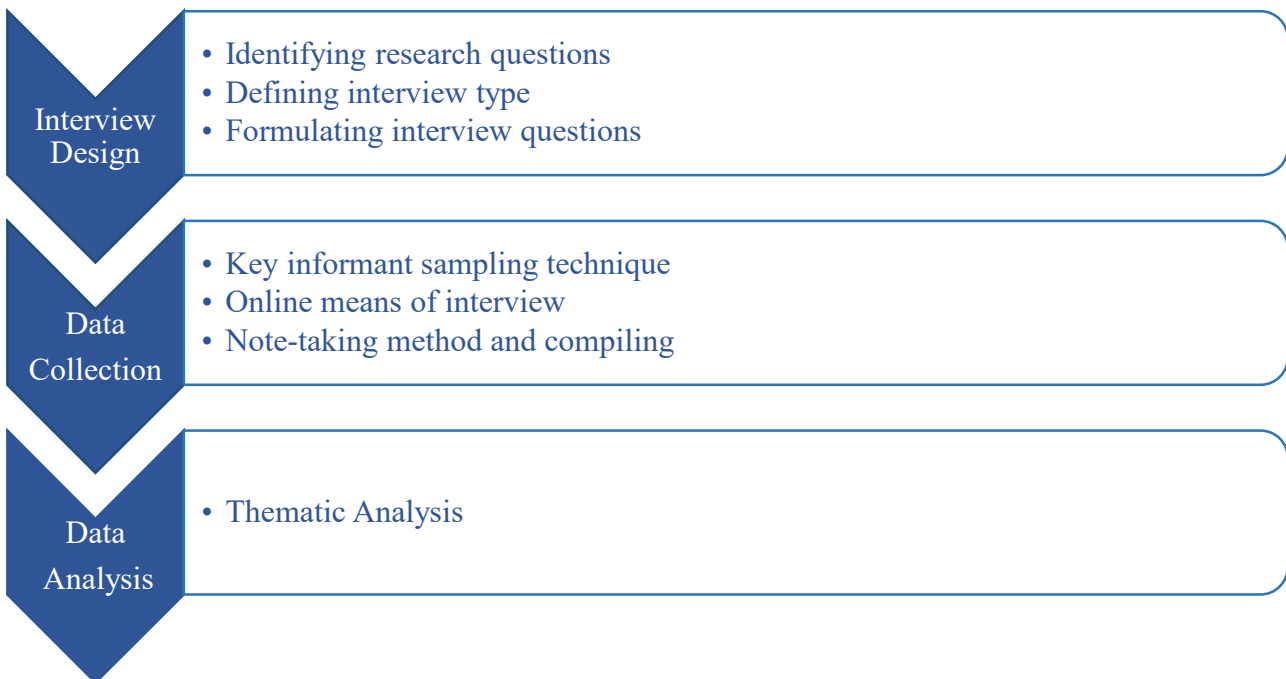


FIGURE 14. Conservation research method stages

6.1 Initial Interview Design

The initial interview design produces the identification of research questions, interview types, as well as interview questions formulation. We had performed critical reflection before determining the interview as the most applicable method to achieve data for outputs. Specifically, the interview style was a semi-structured interview, which was based on a pre-determined set of questions while allowing the interviewer to add further questions if necessary, throughout the interview. Semi-structured interview promoted more flexibility for both interviewers and interviewees to develop the discussion in comparison to structured or unstructured style. After picking the suitable interview type, interview questions were then formulated from general to peculiar. Questions would be starting from the most general ones, for example, the interviewer's background to advocate a smooth start. After that, the interview was focused on a specific theme related to the original purpose of the interview.

In this "Driving change management strategy in ERP implementation" thesis topic, we had devised three crucial research questions, following by the questions of "Is there any universal Change model designed for organizations while implementing ERP?" to "What are the critical elements for organizations when driving change management strategy in ERP implementation projects?" and finally "What are the trends shaping organizations' transformational change in the near future?".

The next step was to specify the type of interview, which we chose to proceed with the semi-structured interview with the key informant. During the phase of key informant selection, we had been working with their thesis supervisor to contact Mr. Kauppinen. During the phase of key informant selection, we had been working with our thesis supervisor to contact Mr. Kauppinen to propose a thesis interview meeting. Kauppinen is a consultant in digital transformation and ERP change management with over 20-year experience in the airline industry. He has been doing ERP functions in manufacturing and distribution companies with the scale of 1000 to 10000 system users, implementing the ERP system as well as performing management consulting in a complex change environment between business and information technology. Additionally, he described himself as a change driver, a person who drives the change, and a man behind the managing director. We are grateful for the unique opportunity of interviewing Kauppinen in the concept of change management for ERP implementations.

When formulating interview questions as a part of developing an interview tool, there were five main components, namely introduction, key questions, probing questions, closing question, and summary. Fourteen out of the original sixteen questions were listed as key questions to evoke information about

the thesis topic. These questions emphasized topics of change management model and critical elements, for example, leadership, people factor, and communication when executing change strategy for a successful ERP implementation. The interview conducted in an online interview technique. The meeting lasted for two hours from 9 AM to 11 AM, and it took place on the fifth of December 2019.

6.2 Data Collection

In conservation research, the interviewee's identification remarked the start of the data collection stage. The selection of suitable interviewee got their interest area aligned with the thesis topic. Due to the complexity characteristic of change projects, we determined to apply key informant sampling technique [Newing 2010] to target insightful information provided by the research's knowledgeable interviewee. (Young & Rose 2017.) Particularly, Mr. Kauppinen is an expert in the field and having sophisticated experience helping organizations with change management while implementing an ERP system. Therefore, it is promising for us to be guided systematically and received a high-quality dataset from him.

To keep the interview convenient as well as the least time and cost consumption, both parties came to an online arrangement via Microsoft Teams meeting after exchanging emails' discussion. During the conference call, the list of questions was displayed to ensure the content's details and facilitate the interviewee's response in full. The interviewers have maintained interactions with the interviewee by elaborating on the questions' context as well as quizzing popped-up questions to dig into the issues.

Owing to the interviewee's confidential work, the note-taking method was carried out throughout the interview. This method gave interviewers a slight difficulty in writing and collaborate with interviewee at the same time. However, the advantage of having a co-partner got the pair managed the conversation flow and fulfilled each other's note afterward for data collection's consistency and sufficiency.

6.3 Data Analysis

Data analysis in qualitative research is undoubtedly a daunting process unless the right analyzing method is chosen. In this thesis, we had adapted thematic analysis as an iterative process to gain insights from interview data. Thematic analysis has gained its popularity among qualitative research methodology, and the aim is to locate conventional models across a data set. In general, it involved six fundamental

steps, namely data familiarization, code assignment, broad theme search, theme review, theme definition, and write-up.

First and foremost was the phase of data familiarization, where we started to go through our notetakings during the interview. One of the most effective techniques was to read and re-read the data to determine which data should be transcribed and later put into specific themes. The second phase referred to assigning labels or codes to data, and the purpose was to make it easier to organize data into critical groups. For instance, codes in this thesis interview were gathered as interviewee's background, change management model, trends in organization digital transformation, organization culture, communication strategy, change resistance, data visualization, artificial intelligence, and so on. As a result of the second phase, various codes were sorted into broader themes. Codes with a similar concept were themed; in some cases, code could become a theme itself or themes could be subthemes to others. It was essential to keep all codes for later use, even though; they might not belong to any groups yet. During the fourth phase, we kept reviewing as well as refining themes from the previous phase to finalize a set of coherent and peculiar themes. The next phase was to define and name the themes in a descriptive way. When describing the themes, it was crucial to illustrate the essence of the themes, for example, if we could tell a coherent story from the themes and subthemes, meaning that they have successfully formed the themes. Otherwise, they should go back to the fourth phase of reworking the themes. The final step was to write the result by using insights to certify the theories. Additionally, key research questions or the objective of the interview were answered. Quotes from the interviewee could be applied to form a coherent narrative. (Mortensen 2019.)

7 DISCUSSION

Change management is crucial to the success of an ERP system implementation. Implementing an ERP system necessitates changes under the aspects of people, process and technology, and especially to the new ways of interacting and leveraging those changes. The theoretical part of this thesis has achieved its objectives in clarifying the role of change management, and its strategies in ERP implementation projects by adapting two suggested change management models, namely Lewin's three-phase model and the implementation program of Galoppin and Caems. We have attained our theoretical objective by extensively researching literature and studies on the subject matter.

In this discussion section, the motivation was to provide interpretations for findings. Notably, we were going to narrate what was already being discussed of the research problem; however, the discussion did not merely repeat the theory; the discussion disclosed new and profound insights or understandings. We considered the discussion as one of the most significant parts of this research paper, allowing us to think critically about the given research questions and to codify more in-depth findings besides reviewing literature research. Through the discussion, the criticality of the paper was also emphasized and contributed to similar field research problems. Readers are encouraged to judge critically or to use findings for further investigating the concerns of this thesis research problems. Regarding this thesis matter, the discussion deliberated change management framework and strategies in ERP implementation project as well as future trends in organization change transformation.

7.1 Change management framework in ERP implementation project

Using the concept of water as a metaphor for change, Lewin's change model consisting of three fundamental stages of unfreezing, changing and freezing has gained popularity and remained widely used today. Over the decades, the change model has received great affirmation on the strength of being simple and easy-to-understand model. In the theoretical part, we have already clarified the functionality of the change model. The goal was to raise people's awareness about the upcoming change, hence making them learn how to adapt to it and finally accepting new ways of working. From our point of view, Lewin's three-step model appeared to be well-grounded and goal-oriented.

Despite being a rational change approach, this model would be practical in today's modern business area if it considered the human factor more. Besides, Lewin's change model was designed in expectation that the collective agreement could be reached from all parties involved. However, that assumption is not realistic, and the so-called change resistance would inevitably occur at any stage ever since not everyone could recognize the benefits and be willing to take the change immediately. Or even if people understand the advantages the new change brings to the organization, they might not be able to figure out how beneficial it is to themselves. This can eventually cause organizational conflicts, a cause of division between those who are for and against the change. For Lewin's model to be truly powerful, an effective communication plan must be carried out to motivate and empower employees from all levels to convincingly adapt to the organizational change.

Regarding the organizational change under ERP system implementation environment, we proposed the change model from Galoppin and Caems implementation program. The program placed emphasis on ERP system development combined with change management by dividing the whole program into nine streams in which five streams were designed for ERP project streams, and the other four were for organizational change streams. Undoubtedly, the implementation program introduced by Gallopin & Caems has provided a structural approach to change management, leading to the success road of ERP projects. Gallopin and Caems (2007) stated that each project streams or system implementation stream only results in its own objectives once it is appropriately integrated. The question is what would happen if any of the nine streams were not well integrated. Meanwhile, the success of the whole project depends heavily on the alignment of all outcomes delivered from all streams. To reach the success target, organizations must comply with additional principles, which makes it confusing and inconvenient to pursue. This served as one of the drawbacks in Gallopin & Caems implementation program.

Even though Lewin's change model is a well-known framework, however, we are curious to figure out if it is widely adopted by organizations practically. Moreover, would it be a universal framework for all organizations with the same objective of delivering a successful change management in ERP project? Given this thought, we have formed our interview questions to pull out answers from the interviewee. Surprisingly, Kauppinen does recommend a model called Collaborative Business Experience, which introduced and has been developing by Capgemini, a world-class consulting, technology and outsource service company based in France, in collaboration with Massachusetts Institute of Technology University (MIT) located in USA.

Setting “Collaboration” as their central philosophy, Capgemini has been helping organizations transform innovatively regardless of change resistance. “Collaboration” in this framework can be described as:

The act of working together in the spirit of willing cooperation and interchange to achieve a shared objective (Capgemini 2004).

and toward four-dimensional aspects, which are, targeting value, mitigating risk, optimizing capabilities and aligning the organization, as shown in figure 15. As change’s nature, it is triggered from change forces and, which could be inside and outside organization (Murthy 2007), companies realize from finance point of view and try to figure out the possibilities to increase the service level with tools and internally with ERP system to have financial competitive advantages against their rivals. This collaborative model approaches the change strategy by drawing a holistic picture of the organization’s strengths, weaknesses, needs and priorities. (Capgemini website.) This model aims for collaboration usage internally and externally (Capgemini 2004).

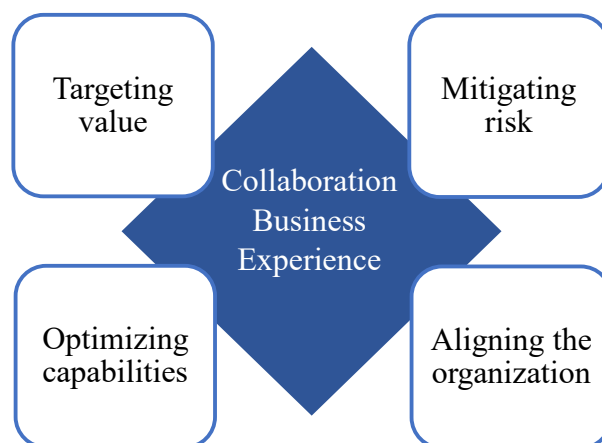


FIGURE 15. The Collaboration Business Experience (adapted from Capgemini 2004)

This framework states out useful and effective points that belong to people, process and technology sides when building collaboration in change strategy (Capgemini 2004). We have summarized in Figure 16. The success stories from companies, in which Capgemini has been applying the collaborative model, speaks for the model’s approval and realization. A piece of well-known evidence that could be named is the Barry Callebaut case. Capgemini has been assisting the transformation of this world manufacturing leader in chocolate and cocoa products since 2012. As the CIO of Barry Callebaut proved:

Capgemini has a uniquely collaborative change management style, which made gave them please to see the implementation of G Suite has brought the entire organization to a higher level of real-time collaboration and as a result, increased productivity (Capgemini 2017).

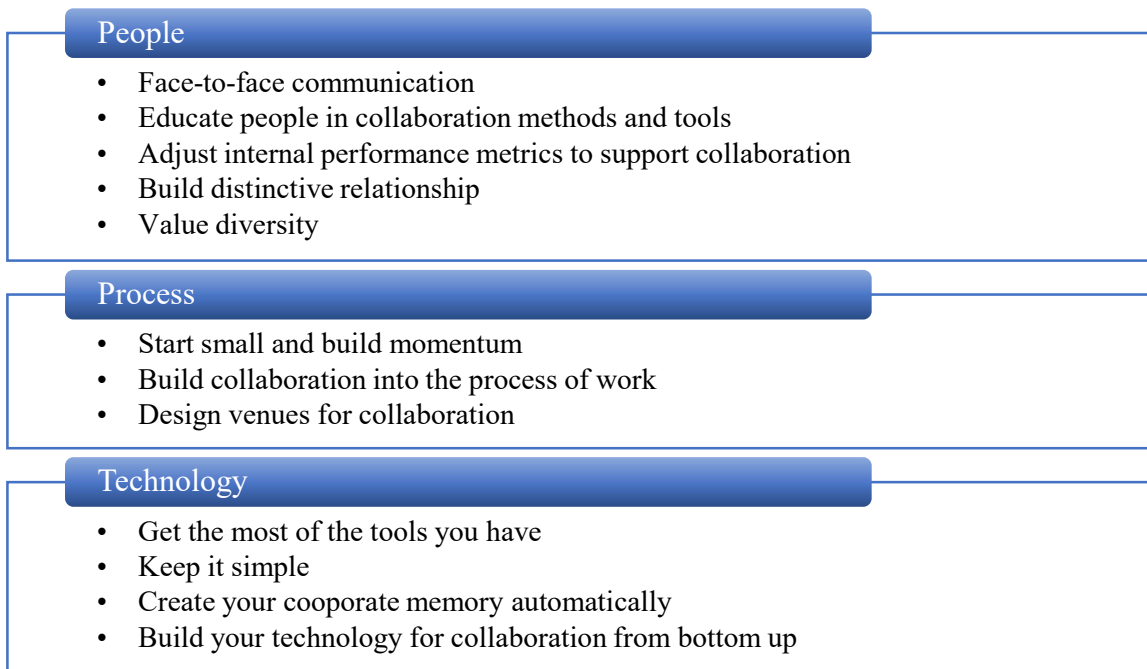


FIGURE 16. Leading practices in collaboration (adapted from Capgemini 2004)

However, this collaborative model works only if it is placed in certain conditions. Based on the interviewee's experience, Western culture suits this framework.

There is so much resistance from people who are working in their daily jobs in a particular way and “without communicating from the start and engaging them to the change design the project will encounter difficulties and quickly fail (Kauppinen 2019).

To the national projects, which only concern people who are sharing the same nationality, i.e., typically China, the collaborative model does not work (Kauppinen 2019).

The reason is due to the oppressive hierarchy existing in the country. From life to work, people's behaviors are expected toward their ranking in those countries, especially, employees expect the managers to tell them what to perform. The interviewee suggested that top-down change management is the ideal approach in such case. To another example by Kauppinen, a Finnish company having a history of 20 years without any big change, apparently, they are happy and comfortable with their current daily tasks. If any change could happen suddenly and is not handled by collaborative style, change resistance can be too much and out of control. From different angle brought up by the interviewee, if we ask business leaders that

How often the change happens in their company, and if the organization gets used to the norm of change, so they are dynamic and capable of conducting a change anytime and regardless of the currently used model (Kauppinen 2019).

To this point, we have mentioned various cases in which they have different aspects to consider when picking a change management framework. We realized the enormous impact of three critical elements

in the selection; they are country culture, company culture, and company capability to adapt change, as depicted in figure 17. The failure or victory of a change project is surely based on what model they have chosen and whether the change leaders have considered those three factors when making decisions.

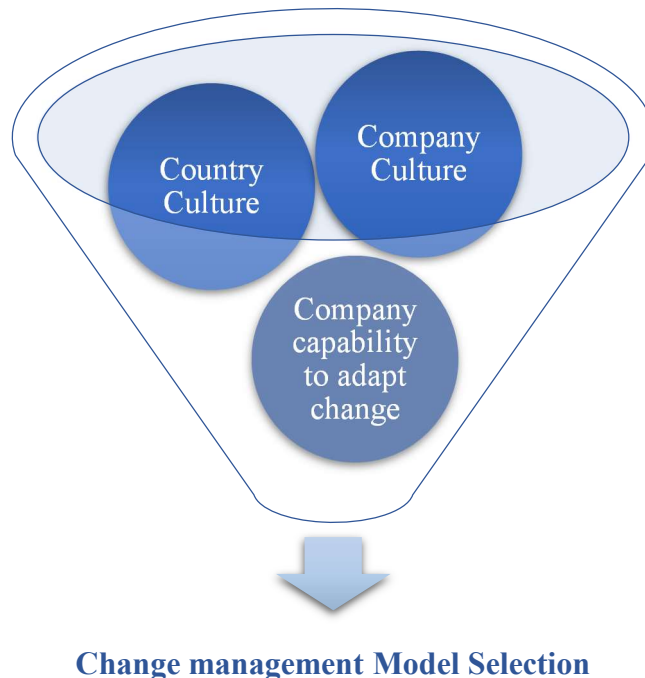


FIGURE 17. Three elements affect change management model selection

Not surprisingly, there is no all-purpose change model for organizations. When selecting a change model for an organization, it is at the top priority to take three elements: company culture, country culture, and company capability to adapt change into thorough consideration. Nonetheless, it was mind-blowing when Kauppinen introduced the Capgemini collaborative change model. This change model was a mix of uniqueness and creativeness to learn about. As it focused on and integrated communication, cooperation and people factor into one model, Capgemini appeared to be a rational model for what we wanted to convey in this research paper.

7.2 Driving Change management strategy for ERP implementation

In the initial stages of change and as survival mentality indication, people usually compare adapting to new changes is like swimming with the sharks. However, “Can you swim with the sharks?” should not be the focus. “Should you swim at all?” is the issue, is what really matters. In the book *The Change Cycle: How people can survive and thrive in organizational change*, Salerno & Brock had indicated the roots of change challenge. According to the authors, any organization, regardless of size, fail to transform unless members of the workforce are committed to the change. The reason why the change process is laborious is due to the unanticipated implementation issues and prime dynamics generated by the workplace environment and the organization’s communication strategy. The gap in change assimilation between company change leaders and employees is considered another vital change challenge. In particular, the challenge lies in the gap between those who are conceived of the change and those who learn to perform it. When it comes to the success or failure of change, the first and most crucial issue is from the willingness of top managers to be responsible for how they are inclined to respond in changing environments. First and foremost, change leaders or managers should be able to address their perceptions, feelings, and behaviors towards the change before addressing anyone else’s (Salerno & Brock 2008, 9). Above and beyond, the potential success of any change process heavily depends on top managers’ ability to carry out the ongoing communication strategy after announcing the change. Therefore, it requires extreme attention and commitment to communication, leadership as well as management skills to build a successful strategic initiative for organizational change, such as implementing an ERP system. (Salerno & Brock 2008.)

7.2.1 Change Leadership Strategy

Change management has been broadly described as a set of structured or systematic approaches controlling and leveraging organizational changes with a view to transforming organizations to a desired future state. The concept of change leadership, on the other hand, focuses on the driving visions, processes, and strategies that power the broader transformation. Forbes has interpreted change leadership as an engine, an urgency, big visions, and people empowerment (Forbes 2011). If people are known as subjects of change in change management, change leadership motivates them to become change drivers and change agents through approaching collaborative and creative change model. The change process in change management is usually depicted as controllable and manageable. Change leadership sees a more

dynamic and innovative process, which requires the willingness of everybody of all levels to go beyond their jobs to value the people factor, including communication skills.

Supposed change leadership is an engine, and then the change agent will be the one who rides the engine. Simply put, change agents can either come within or outside the organization, and their role is to help the organization transform itself, focusing on the matter such as organizational improvement in technology or structure. However, the role of change agents can vary differently, and each role has a direct effect on organizational change.

In order to make sure that a change agent can be successful and highly effective in their own roles, the organization must be able to select the right change agents, work with them so that they have change vision in their mind and then they can make changes happen in their departments and in their teams for every role they perform (Kauppinen 2019).

Concerning the roles, an investigator is one of the roles that change agents play in which they use their analytical and observant ability to determine the submerged portion of the iceberg in change resistance and obstacles. In the role of an advocate, the change agent must be resolute and vocal in taking the initiative to get people involved in the change process and help them speak out their thoughts or feelings. Being an encourager means that a change agent is a good listener who understands the role of schema. In psychology, a schema is a cognitive framework organizing and shaping information in mind about actions, feelings, or situations that are based on pre-existing beliefs and ideas (Cherry 2019). A cognitive psychology study has proved that memories serve as a critical index for how humans encounter during an unfolding change situation. Memories are dominant in a way that they could interpret what is or might be happening to us as an individual, even though there might not be any connection between the past and what we are going to experience. That answers to the question of why most people resist the change as the brain will recall past experiences and try to conclude that there can be risks or loss of control. Besides being a good listener, central missions of an encourager are to become aware of changing schemas themselves and help others to re-design their old change schemas into more positive and beneficial ones (Salerno & Brock, 2008, 12). As a facilitator, a change agent shows their creativity in designing systems or platforms, making it more accessible for people to learn and perform. Specifically, Kauppinen as a man behind the managing director, considered what makes him a right change agent is his ability to understand the leaders and to interpret in a more simplified way to people below in the organization.

Conflicts are inevitable during the change cycle, and here comes another role of a change agent as a mediator. There is a stage when the change picture is so unclear that it causes doubt and discomfort among employees. The mediator promotes people from the state of discomfort to motivation, helps them

discover a new perspective, fosters the understanding and collaboration to implement change. One of the last two roles of a change agent is known as an advisor in which change agent is confident in sharing or transferring knowledge and expertise through training or workshops to direct people. Through the interview with Kauppinen, he mentioned that a skillful change agent requires qualification in the change method approach, knowledge and understanding and for example, himself undergoing training from consultant companies to become a qualified change agent. Finally, there is the role of a manager who can keep people on track to achieve defined targets or goals.

As mentioned earlier, a change agent can be a consultant that comes from outside or within the organization. Through consultancy experiences, the thesis interview key informant addressed one challenge of having external consultants. This challenge occurs from the fact that companies usually hire external change agents to drive the change, to lessen the pressure or burden in the internal workforce. However, external consultants come for a short period and move away after the project, leaving the continuous change-related work to the internal change agents. The one who stays in the organization will come to a new situation where that need to keep the position or improve it.

To conclude, a change agent could be involved in more than one role in organizational transformation. They also serve as change drivers with exceptional versatility within a broad set of skills and knowledge, who truly understand the change vision and carry out change management strategy for successful project implementation. To Kauppinen, characteristics of change agents should be positive, open-minded to changes, people, cultures, and topics. Based on the roles and characteristics of change agents, the thesis author acknowledged and wrapped up the four most vital elements of change agents that contribute to the success of change leadership, and on a broader scope of an organizational change initiative. These are namely: communication, commitment, cooperation, and people-empowerment which are showcased in the following Figure 18.

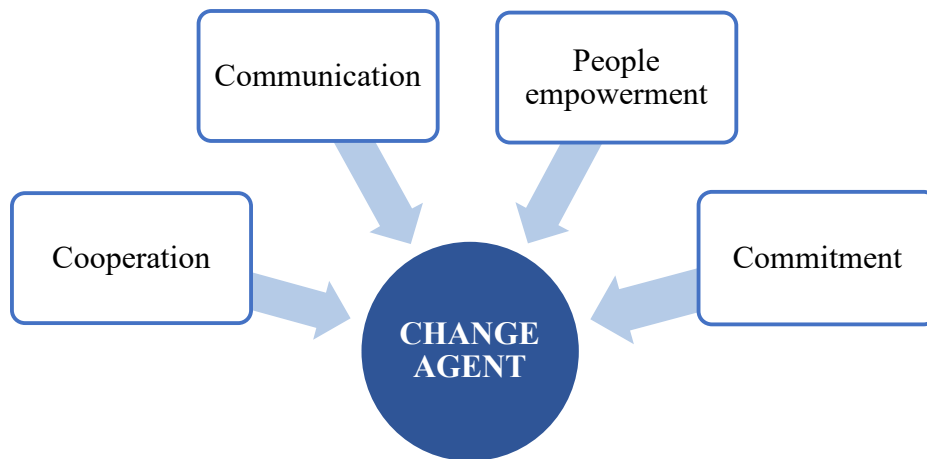


FIGURE 18. Propose four critical factors of effective change agents

7.2.2 Change Resistance Management Strategy

“Change without resistance is no change at all – it is an illusion of change” Harvey [1995] once had stated. However, the majority of managers have always perceived the employees’ resistance mentally as a lousy sign, often bringing them endless headaches to deal with. One suggestion from David J. Jones and Ronald J. Ricardo is to approach resistance differently. Not all resistances obtain negative effects. Those resistances might also share positive input to change initiative. (Jones & Ricardo 2013.) Being in line, the concept of Elizabeth Kubler-Ross about individual change, as shown in item 3.3 of this research. The resistances to changes are expected, and not all of them are permanent (Kubler-Ross 1969). Therefore, the research authors want to highlight the significance of change resistance’s perception of which change leaders should consider. First, it could be a warning to catch the leaders’ attention on employees’ concerns, and perhaps, a small adjustment in a change initiative, possibly in communication or change representation, is needed. Second, if people react to the change, even it is not acceptable, yet the leaders should consider those resistances as a good signal. The change started to be present in people’s consciousness and challenging them to jump out of the old-fashioned style for a new approach.

Driven by technology, ERP implementation requires people to adopt new standard work involving learning a new system. This fear haunts people and eventually generates change resistance. (Markus 1983.) To Duck [1993,113], changes in an organization are the feeling-based focus. In other words, getting

people to change involves not only their heads but also their feelings. Managers get to empower employees by translating the changes to inspiring messages, including staff in drawing the change map, clarifying, and providing guides. At the level when the leaders win employees' heads and minds, employees will show their commitments to the company and the change initiatives. (Coetsee & Flood 2013.) The human-centric perspective is always weighed as the greatest in guiding people through changes. In a collaborative context, forcing people to follow a change initiative is not appropriate. It is critical for leaders first to identify the origins of resistance and walked them through those anxieties.

As depicted in 4.2.2, change resistances are mostly originated from individuals' fears. They are fears of losing position, paid, and comfort. Kauppinen relates his consultancy experience of thoroughly understanding this fear and that resistance comes from all over the organization, not only employees but also managers. To this point, resistance management becomes critical than ever since this involves the company workforce, and if it is not handled wisely, the whole business might be dragged behind. It is a wise act to minimize change resistance at the beginning when making a change strategy by having a suitable approach to engage people along with the change. The change leaders get to put themselves in "the shoes" of normal workers and figure out their jobs' frustrating aspects and what their interests are. To managers, they are afraid of losing their positions, not their jobs. So, giving them the right message of the change is vital.

We are trying to help you get rid of manual work with automation (Kauppinen 2019).

You have a long story with the company, you know our customer well so that you can add value by increasing our service level (Kauppinen 2019).

We have learned from Cameron and Green that individual is the root of the change. Starting from each member to a group and expanding to the organization, change occurs. (Cameron & Green 2012.) That fits with the interviewee's experience in managing change resistance, which requires the act of scanning through the organization and clarifying every individual with the main question of against or support the change. The change leader then labels them up with red, yellow, and green colours; and each group will be served with different treatments as Figure 19. People's behaviours tend to be affected by others in the same team so with the red group, who are firmly denial to the change, the leader needs to leave them out to reduce negative influence on other team members. Yellow colour represents the persons who are neutral and hesitate to follow the change. To this group, they could not be change agents; however,

Communication is needed to involve them with an engagement plan, get them on board to support the change (Kauppinen 2019).

The green individuals have a positive perspective and change initiative's beliefs. The leader should consider them to be change agents for expanding their supportive impact on the team and to the whole organization. Setting change agents in each team, as Kauppinen suggested, change leaders can monitor change resistance by having those change agents to report the status as change resistance weather forecast. Depending on different weather types, storming, calm, or sunshine, change leaders assist change agents to prepare and have the right action at the right time.

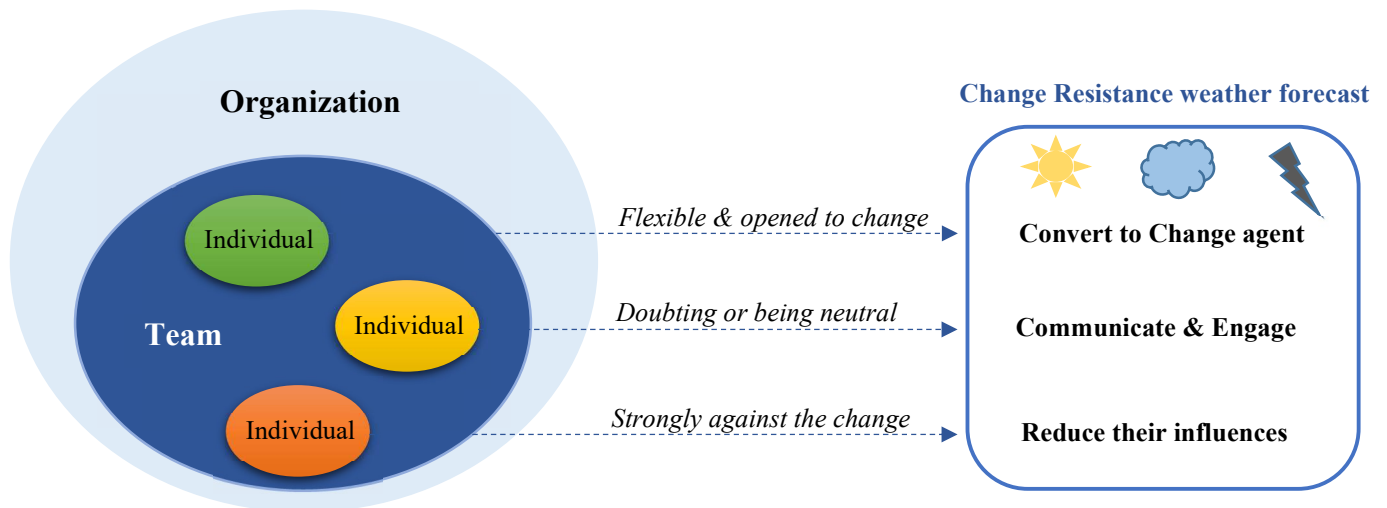


FIGURE 19. Proposed change resistance management strategy

7.2.3 Communication Strategy

In their framework, Galoppin and Caems have defined communication as one of the most fundamental streams of organization change management in an ERP implementation project. A realistic and efficient communication plan is a must contributing to the project's success, and it should be planned at the same time when organizations are making and ERP implementation plan. (Galoppin & Caems 2007.) Their well-structured framework got the communication stream sliced into pieces throughout different phases in the project. All sub-activities in each phase are standardized for a typical ERP implementation project, and by doing this, they possibly wanted to guide project leaders through a detailed project plan.

Kauppinen emphasized the communication strategy in a collaborative context with a holistic approach on who, what and how. An example of a large-scale airline's project with approximately 2000 ERP system active users among 4000 employees from 50 countries was sampled up to prove the importance

of communication solution in a change project in ERP implement life cycle. The assessment of it must cover two flows, which are top-down and bottom-up (FIGURE 20).

Top-down communication refers to the flow from the change's kick-off when external consultants translated managing director's visions and transferred to senior management, to middle management and ultimately to non-managerial employees (Kauppinen 2019).

The channel for top-down is basically via internal online or offline conferences and workshops. Bottom-up communication oppositely indicates the process of involving employees' ideas and perceptions to change initiative through a defined communication channel. As a good communication strategy, it should give each team the freedom to decide what platform works best. The results from his aforementioned project certified.

Change agents in each country chose different platforms, for example, the team in Singapore, they used their creativeness to build their mobile application, another team picked intranet webpage, others agreed with the style of roadshows (Kauppinen 2019).

The solutions can vary; however, they all achieve the objective of being a suitable and adequate communication platform.

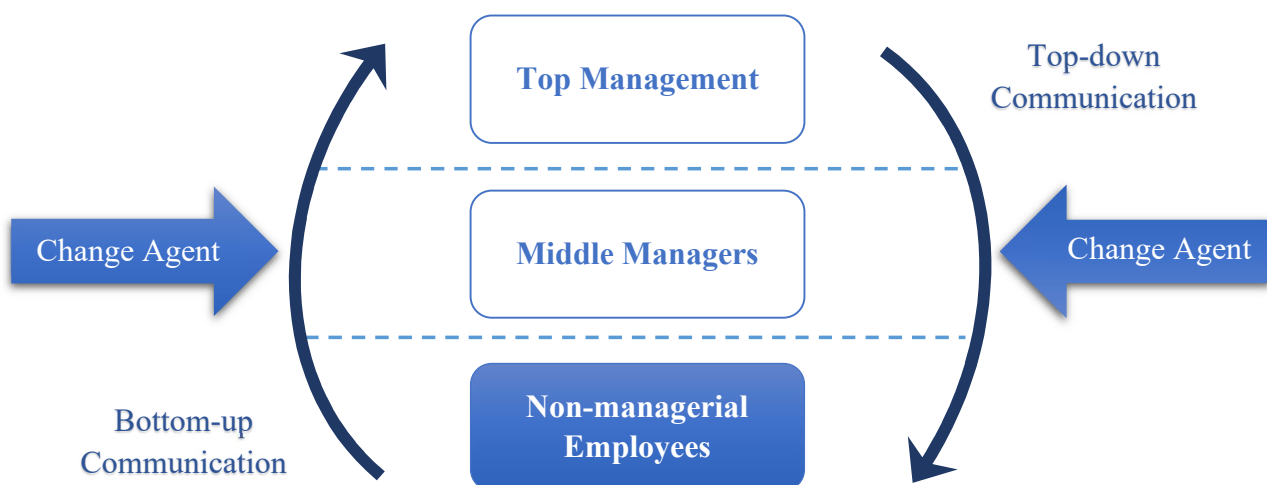


FIGURE 20. Harmonized communication strategy

Since the organization changes only when individual changes (Cameron & Green, 2012), the communication strategy should delegate to the bottom as the interviewee suggested. Therefore, these two flows are preferably not conducted separately. Instead,

Company-together events should be arranged, and this is the time when the top and bottom get their strategy aligned; and everyone is on the same page of the change progress (Kauppinen 2019).

As an excellent example of bottom-up communication practice, the “I’m ready” campaign, which Kauppinen’s project has used, proved the significance of an effective communication strategy. The solution was simple, yet impressive based on the result it brought. Each employee by answering “yes” to the question “Am I ready?” will receive a “diploma” placing on their desk. This creative communication method gave the management a clear signal of effective changes on each employee, moreover, connected all employees toward the change.

7.2.4 Users’ proficiency and knowledge transfer strategy

Originating from one of the thesis interviews questions of how organizations handle knowledge transfer and foster collaboration between different teams during and after ERP implementation projects, we addressed the role of end user’s capability and perceptions towards the road to success of ERP projects. Implementing the ERP system is not always as effective as planning, and many companies, for example, Hershey, Kelloggs, or Boeing, suffered from ERP implementation ineffectiveness. Consequently, we have put great efforts in determining risks and failure factors as well as identifying practical elements. One of the most cited ERP critical success factors belong to the competence of the project team, including the suitable team member with relevant knowledge and skills. However, there is one existing gap between the project team and end-users, which is called knowledge transfer. For the gap to be connected, and for the ultimate success of system implementation, key users are responsible for sharing their business process knowledge with consultants while learning ERP knowledge from consultants and sharing information with other users. Maditinos, Chatzoudes and Tsairidis (2011, 60-78) have done a study reported that knowledge transfer is of great importance, and key users contribute significantly to that transfer of knowledge. In particular, the role and tasks of key users can vary from trainers, advisors, or change agents for end users. (Mahdavian & Mostajeran 2013.) Earlier in the change management framework, we have analyzed the ERP implementation program. As authors of the program, Galoppin & Caems emphasized learning as one of the fur organizational change streams. This stream addressed three main questions on why and how employees can learn. The answer was delivered by the act of building a community of knowledge sharing, which eventually leads to a training organization. The success of learning streams depended on the practical scenarios when learning materials were integrated into the working environment.

Generally, in an ERP project plan, there are changes in business and IT forming different teams when combining these two changes. Different teams refer to the core team for the change, core team for ERP system implementation, and support team throughout the project. Regarding the business change team side, external change agents usually leave after the project go-live, leaving the internal change agent to stay. Here occurs one of the biggest challenges called key moments of ERP implementation when involving the big group of end-users. Explicitly, it is in the development or implementation stage of user acceptance testing (UAT phase). As sometimes, we tend to focus on the automation set up or manually run the software testing and forget how the user experience is supposed to be. This explains why the UAT phase, including user feedback, is considered the secrets to the success of the implementation project. In ERP, user acceptance testing involves getting business users to test the regular scenarios in their daily tasks with the system landscape before releasing the system officially. UAT is beneficial in a way that helps define user's proficiency, hence minimizing the system failure, possibly due to a lack of user adoption. Moreover, UAT empowers users to engage in the system by delivering system modifications based on their feedback. It is of great importance to ensure how and when the system should be tested. The perfect timing for effective UAT testing is suggested to happen before the user training and project go live but after the Quality Assurance (QA) testing. Besides, test script or detailed document testing with expected outcomes should be built for individual roles and business processes. (ERP softwareblog 2014.)

During key phases like UAT and training, a big group of end-users gets the hands-on experience of the system and the user experience can be positive or negative. As a result, Kauppinen recommended that organizations should have a clever plan to handle the knowledge transfer from the change team into the implementation team. For example, the change team can propose a sales process testing where it is designed like a happy flow, meaning users test it so well in the SAP ERP system, in the training or UAT, and the happy flow goes very well. Eventually, the end-users get good experienced, stimulating the team collaboration and their adoption of the system. The thesis key informant, Kauppinen, brought about a compelling case in a 4000 employee-company where they implemented the "I am ready" campaign, which was already mentioned in the Communication strategy above.

Each employee was given a clean paper with one question: Am I ready? The yes answer meant: 1. I know how to use the system, 2. I know how the new processes work, 3. I know so well that I can teach my nearby colleagues how to use the system and new processes (Kauppinen 2019).

After the project go-live, the work is not done yet. Users require to be at a certain level of the system using proficiency. They can identify specific business specifications for system configurations. There is a connected relationship between user learning towards proficiency and the maturity development of the

system. According to Kauppinen, there are critical ERP periods after the system go-live. One week is the first critical stage for people to perform their daily tasks. One month is the second stage, where the system usually begins to integrate with the finance department. Because the ERP system is integrated, it integrates different processes of the organization, and the total time when it becomes stable and reaches standard functionality is one year. An ERP system becomes matured after the customization integration is made to the system, typically in 3 years.

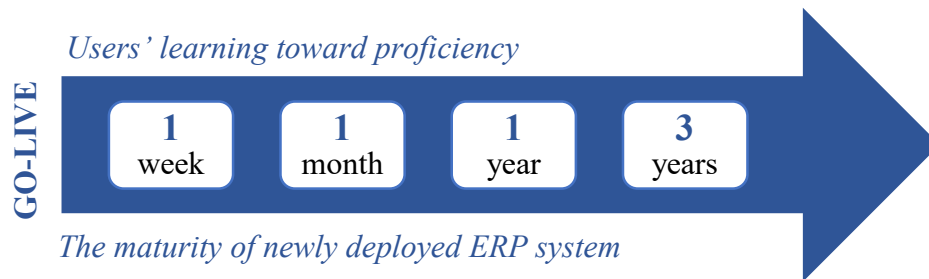


FIGURE 21. After go-live milestones from users' learning perspective

7.2.5 Strategy alignment between change management and ERP implementation

Galoppin and Caems have used Lewin's three-step framework of unfreezing, changing and refreezing as a guide to build up activities for ERP implementation projects (Galoppin & Caems 2007). This theoretical strategy is proven by the interviewee's experience that change strategy and ERP implementation strategy should be kept in one and the same project. This act enables the project visible to everyone; in other words, people get in mind the forthcoming changes, which are organization, process, and technology related.

To the details, the framework of Galoppin and Caems defined nine main streams flowing within a Change project in the ERP concept and those streams must be integrated and aligned throughout the project. Four are from belongs to ERP, namely Implementation stream, IT/IS stream, Testing stream, Integration stream and Program Management stream. (Galoppin & Caems 2007.) Contributing to Change streams is from Organization, Communication, Learning and Performance. Kauppinen shared the same approach.

Started from the beginning, when the organization decides the implementation, change plan should also be planned at the same time (Kauppinen 2019).

When ERP solution and architecture is on its way, the organization needs to assign people to work with change vision, setup change agents' team (Kauppinen 2019).

Not only from the procedure side but Kauppinen also pinpointed that different people working for change aspects and project aspects should be in the same team. Their tasks should be visible to each other and under a well-organized detail project plan and timeline.

ERP implementation project solely could not reach its objectives as it is just a system. To manipulate it, people are the ones. In other words, ERP is just a tool for getting people to work more smartly and helping organizations achieve the best business values. However, we are human beings, having feelings and reactions. When applying ERP triggers a change and the change directly affect people's usual way of working, there the change resistance occurs. Considering people are organizations' greatest asset, the change resistance is to be handled wisely by change management projects. The theory by Galoppin and Caems has been proven from practical cases by the interviewee, Kauppinen. Therefore, this research indicated the crucial role of strategic alignment between change management and an ERP project to obtain success.

7.3 Trends in organizations' future transformation

As we are living in society where "Change is constant!" (Hyper Island), organizations are required to keep these changes up to date; thus, react correspondingly. These changes frequently concern technology adaption since the light-speed of innovation increases. However, for the first time, it is not about technology. This time, Mckinsey stated, workforce transformation involves as a trigger (Sundararajan, Dhar, Blue, Camden, Kasriel, Katy, Chui & Lund 2017). From a business perspective, proactive companies do not wait for the change to happen and follow. Instead, evaluation and prediction are activities happening daily in those companies. Anticipating the trends is intricate, yet a wise act to perform. This move plays a significant part in the company's success. As relevant meanings to change management, we form this section of our discussion focusing on on-going and forthcoming trends, which reshaping the organization for their competitive advantages or even to the businesses' survival in this harsh economic battle. In addition, trend related opinions of ours and the interviewee are expressed.

7.3.1 AI

At the World Economic Forum 2018, Artificial Intelligence (AI) was a topic in the spotlight. Data from McKinsey research has shown that at least one AI capability was embedded into business processes by 47 percent of organizations. Specifically, between 2017 to 2018, the percentage has doubled and reached 47. Microsoft Transform stated that there is not an industry that is not being transformed by AI. It is no doubt that we are doing business in the world of AI, and AI is changing how we work and interact. The biggest challenge occurs in how organizational culture should adapt to leverage the increasing impacts of AI in all enterprises. As a successful AI implementation requires more than an individual IT department or a technology team, it calls for support and partnership from the entire business. In other words, the ultimate potential of AI can only be unlocked when the organization can revolutionize the way they run business.

Through the thesis interview, Kauppinen, with years of experience in airlines, addressed some benefits of AI adoption in this industry. He gave a specific situation in operation control center with more than 20 TV screens broadcasting information of weathers, flights, passengers or securities, and so on. In this scenario, there was so much information and data that people behind with 20 years of experience in different kinds of situations, for instance, different weathers had to use ten separate applications to take all information for decision-making. This could be done automatically with AI; specifically, AI was able to collect information to make trends as well as calculating with algorithms using given trends. As stated by Kauppinen, the AI should be used to predict and decisions to be made; however, it should be humans who critically verify those decisions suggested by AI tool, and the challenge is to have people who can use and accurately manage AI. Besides, the thesis interviewee also pointed out another example of artificial intelligence's inability to understand under the safety aspect. In the airline cargo department, there were places to put weapons, chemicals, explosives, and even animals. Computers can easily suggest putting explosives or radioactive chemicals next to the animals as computers would not see the difference. As a result, in the worst scenario, when the plane went up in the air, the explosive could explode next to the animals. Kauppinen expressed that humans would understand that animals and chemicals were not meant to put next to each other; therefore, there should always be humans to make the final decisions on what things should be done. And with the current landscape, Kauppinen was not convinced that organizations are not yet ready to adopt AI into their way of working.

It is obvious that AI plays a crucial part in on -going and future advancing business processes, enhancing data analysis, smarter decision-makings for better action-takings. But besides, it is even more important

to be aware that AI not going to take the human out of the process or taking over the entire decision-making. In the opinion of Matti Aksela as the vice president of AI in F-Secure, people tend to mis concept that advanced AI mimics human intelligence. This causes a limit in human's perception of what AI can and should do. Aksela suggests that human should be exploring ways to unlock the AI's potential rather than building AI to function as though it were human. (F-secure Pressroom 2019.)

7.3.2 Visualization

Along with front-office innovation to integrate operation processes within the organization and with partners, the back office is also enriched with functionalities that generate qualified and informative reporting platforms. The platform is a story-telling place to transform raw data into visual make-sense content. By doing this, business leaders have an assessment of current business conditions and insight where they should focus on drawing strategies. (Worster, Weirich & Andera 2012, 82-83.)

Data is only usable once people make it speak out its meaning. The old-fashioned working style with hard numbers in massive Excel spreadsheet has been replaced by data visualization, which gives users a holistic overview, trends, and quickly. Especially in this Big Data era, the visualization platform and technologies place an essential role in helping executives monitor and lead the organization by making a data-driven decision.

Esther Burt quoted:

Data visualization capabilities enable change management dashboards that collect, merge, and present data in an understandable form while offering inquiry ability for better decision-making (DiversityPlus Magazine website).

Indeed, the dashboard is not merely a discerning graph that pleases the audiences' eyes. The messages, which came from the result of the visualization dashboard are the hint to the leaders that they need to change. Furthermore, the dashboard is also applied for change project to provide critical information to change leaders. It depicts the organization change analysis, including managing resources, financial budget, changes readiness, and so on. It assists leaders to spot out existing issues in the complex change project.

Nowadays, the KPI dashboard is being adopted by organizations to track and ensure the business is going as planned strategies. In "Tomorrow's KPI Dashboard will be your boss," the author Michael

Schrage has explained what benefits the dashboard boost change management and support change leaders to carry out the successful change. KPI dashboards provide secure information to managers to identify the behavior in change. From there, the leaders anticipate up-coming situations in which possible problems would occur, and the necessary adjustment is needed (Diversity Plus Magazine website.)

Business Intelligence (BI) tools or software with different features and functionalities are being widely used across companies. Surveys have shown dashboards, visualizations, reporting, predictive analytics, data mining, ETL, OLAP, and drill-down belong to the functionality list that organizations expect from BI tools. Among those features, dashboarding was the most desired one, alongside with visualizations (Adair 2019). Thesis key informant Kauppinen found it challenging to propose the best tool, yet he suggested adopting the uncomplicated BI tools because the easier the BI tool is to employees, the more benefits the company gets. Regarding the SAP ERP system, Kauppinen recommended companies to use the BI tools that work best with the core ERP, where there are data templates ready, hence simplifying user adoption process.

If only five people know how to master the tool and produce good data analysis, however, others do not understand, meaning that tool is not so efficient. Being efficient means, you have a group of 50 people who can do and get their dynamic analysis for decision making and their daily jobs. (Kauppinen 2019.)

7.3.3 Workforce

Force Magazine has published an article articulating that our workforce today coexists of five generations. The list calls the names of Generation Baby Boomers, Generation-X, Generation-K, Generation-Y, also called Millennials, and the youngest one Generation-Z. It is about an approximately 50-year gap between the oldest and newest ones. Undoubtedly, each entity brings unsimilar expectations, contributions, outlooks to the development of society and economy. Therefore, we believe that one could imagine how much change can be triggered by a newly joined generation. (Gournari 2019.)

To the combination of five generations in a workforce, organizations' leaders need to have a holistic approach to the whole. Indeed, the gap of generations roots the employees' behaviors. Young ones tend to reject traditional and obtain themselves a modern way of doing things. Generation conflicts could quickly occur. A situational case for managers, they need to lead the team with the balance, which encourages innovative thinking from the young and broadmindedness from the seniors.

As a part of technology innovation, communication tools are advanced nowadays. Thanks to those, people are stepping to the remote working style, beyond that, forming virtual teams. Notably, digital platforms enable the workforce being flexible working locations, having real-time information flow, and independently working as freelancers. People can have more opportunities to have income from different sources in their own time, abilities, and capacities controls. This trend, however, additionally generates challenges to the organizations on how to manage the workforce effectively in terms of productivities, benefits, policies, training while having possible risks of securities. (Manyika, Lund, Bughin, Robinson, Mishke & Mahajan 2016.)

Looking at a different angle of technology development, it requires the leaders to have an open mind on technology innovations. To the fact that the top leaders are aging, Millennials and Generation-Z occupying the majority in the job market. Moreover, the new generations they are proactive and quick technology absorbers. This scenario raises a question of the workforce's repositioning in which Millennials will take over the role of digital transformation leadership (Tucker 2018). Respond to this, Kauppinen voiced out the importance to have of a digital transformation leader who needs to obtain a true understanding of the company business, as well as an experience of leading IT projects.

8 CONCLUSION

The 2019 ERP report has identified that a successful ERP deployment or digital transformation project is the result of people, process, and technology alignment. Technology solely does not bring a dream business scenario, to which companies are aiming. In fact, change management with an intentional focus on these three aspects will secure the ERP implementation project. (Panorama 2019.) However, compared to the technology, people and process are much more challenging to manage. Especially once those three are in the same package. It requires organizations to have a precise set strategy throughout the event.

Change management is not rocket science, yet it does not happen overnight. We believe that selecting a suitable change model to approach, and the right strategy to follow will pull a fruitful outcome of a change project in ERP implementation become reachable. This idea has been the main objective of this thesis. The item structure, therefore, formed a flow from the introduction start and walked readers toward the end with satisfying answers. Acknowledged the change's influence when a company is ahead of trends in our exponential technology era, we discuss some current transformations, which impact organizations on their way of digitalizing.

We share the difficulties with organizations in evaluating and adopting a suitable change management framework. The research has shown that there is no existence of a one-size-fits-all framework. The change leaders need to consider different aspects in terms of country culture, company culture, and the company capability adapting to the change. However, as an interesting finding of the thesis, to some extent, the Capgemini's collaborative experience approach likely could be the one suitable for the project located in Western countries or involved cross-country references. Top-down approach countries have similar ranking cultures as China, and the project only is in a national size.

Having a suitable change model is a vital factor, yet, not a one hundred percent determining factor for ERP project implementation ultimate accomplishment. Through literature research, information from thesis interviewee Kauppinen as well as from our findings, we conclude that five critical strategies are contributing to the overall success, besides the selection of a good change model. These five strategies are, respectively: change leadership, change resistance management, communication, user proficiency,

and knowledge transfer, together with the alignment between change management and ERP system implementation.

First and foremost, we consider change leadership strategy as a decisive key, turning a change to a win or a loss. It can be understood that the fate of the change project is placed in the hands of individuals who drive it. Change agents are the ones in this case. Studied by the thesis, there are four elements that a change agent needs to fulfill for the change leadership strategy; they are communication, corporation, people empowerment, and commitment. A change agent plays as “an excellent and experienced actor,” who is qualified to carry different characters in suitable situations. The list of possible characters comprises several ones as an investigator, an advocate, an encourager, a facilitator, a mediator, an advisor, a manager, and so on.

There has been a stereotype when it comes to the resistance of change. Leaders usually assume change resistance slows down the change management process, and if employees react negatively to new changes, the project is likely to suffer from failure. This assumption does not hold in all cases. The truth is, change resistance can bring about positive input when being adequately handled. Alternatively, even if it causes negativity, and there is no need to get panicked at all since it is a good signal showing that the existence of the change starts to form in people’s perception. The key to leverage change resistance is to find the real reason why employees fear to face the change. Change leaders place themselves in everyone’s shoes and try to listen from different backgrounds. There could be hundreds or thousands of approaches to change resistance; however, we do believe the timeless approach would be focused on the human factor. Being human-centric means change plan is implemented in a way that change leaders can deliver inspiring change messages while providing thorough guidance. Instead of forcing people to accept the change, leaders empower people to realize the benefits new change could bring to the organization and themselves. We also proposed their change resistance management strategies based on advice given by Kauppinen. The goal is to scan through every individual reaction of the change and categorize them into colored groups. The red color group refers to those who are much opposed to the change. Yellow means they are neutral to the change, and green shows that they are a change supporter. Depending on each color group, different approaches are made to minimize the negative or too aggressive influence while gaining change support and spreading its influence into the entire organization.

Having an adequate communication strategy is undoubtedly a massive step toward success in a change project. Especially in an ERP implementation project, the change happens in three dimensions, namely process, people, and technology; therefore, communication is more crucial than ever. That is the reason

why we place communication as a part of the change strategy. As a result, we want to highlight how communication should be conducted and what the platform is. Particularly, change leaders should consider the communication flow happening in two directions top-down and bottom-up so individuals can understand the change vision, at the same time, engage in the project and contribute to the change initiative. To the communication platform, the team should be given the freedom to pick one if it fits their needs, and they are comfortable to use.

The ERP implementation project reaches its goal only when end-users know how to use the system, to integrate it into their daily tasks and ideally to teach other nearby colleagues to use the new system. To achieve this goal, there is a need for knowledge transfer between the ones who implement the system and the ones who use it. Consultants share ERP knowledge with key users, whereas key users exchange business knowledge with consultants. User Acceptance testing is then carried out so that end users can test their everyday tasks on the new system. Feedbacks are highly appreciated to re-design a user-friendly system. Knowledge transfer and user's proficiency should always go hand-in-hand to minimize the failure possibility of an ERP implementation project.

We have proposed strategy alignment between Lewin's three-step change model and Galoppin & Caems ERP implementation program. The proposed strategy alignment was partly rooted in thesis interview insight, in which Kauppinen suggested to keep change strategy and ERP implementation at the same level and throughout the project. Lesson learned from the strategy alignment is that ERP is merely a tool to smoothen the business processes, whereas humans with feelings and emotions are the ones who actually drive the change management strategy for a successful ERP implementation.

Back to change triggers, it could be originated externally and internally. People consider outside factors uncontrollable and more complicated to deal with compared to the inside-company causes. Companies nowadays strategically form their wise and proactive acts by continuously analyzing to approach the trends or even stay in front of them. So, once a change force occurs and has its effect on the industry and organization itself, they are prepared and respond accordingly. This thought made the us intrigued about discussing the trends and giving our related opinions.

Will AI replace humans? is probably one of the most controversial questions. The workforce is living in fear that advanced artificial intelligence and machine learning can someday replace them, hence the attitude towards AI can be very misleading. In fact, the role of AI is to help human work a lot easier, for example: release humans from repetitive tasks. There is a tremendous number of methods we can explore

to get the unique potential of AI, instead of assuming AI should mimic human intelligence. It is important to keep in mind AI remains inhuman, and it is humans who are responsible for making the final decisions, even if decisions are suggested by AI. Answering the question of whether organizations are ready to adopt AI into their organizational culture, the response is that they are not ready yet. The adoption does not happen overnight. It will only be possible when an organization can revolutionize the way they run business and unlock the unique potential in AI.

Unquestionably, we have seen increasingly high demand from organizations for Business Intelligence tools. The reason is that these tools provide incredible features and functionalities essential for today's competitive business environment. One of the most desired BI tool functionalities belongs to visualization, and the next one is the dashboard. With data visualization, the organization achieves better data analysis and data-driven decisions. It is challenging to propose any best BI tools for the Visualization function. However, the most suitable one would be accessible to a large group of people within the organization, meaning people are confident to use the tool and share the knowledge or experience with other colleagues.

Workforce's transformation is creating a trend towards a modern way of working, in which people get the most out of technologies and manage their works in the best convenient and comfortable way. Contributing to the workforce's changes, we can count on the effects of different elements. Firstly, the variables of labour generations are increasing. Currently, we are having five generational groups joining the workforce; however, the number will not just stop at five. Secondly, advanced communication platforms permit people work remotely and flexibly; therefore, the trend of working independently without attaching to one and only workplace is facilitated. Thirdly, a possibility could be considered the increase of the young generation holding leadership roles of digital transformation. Got to know these changes in the workforce, this is a question to HR or organizations' management to adapt and minimize hidden risks.

One of the limitations of this study is the lack of a case study from companies. Had the thesis been provided with real data to analyse from the case company, we would have been able to deliver more practical research papers. However, the theoretical part was accomplished based on trusted literature reviews, and the knowledge was tested against information from our thesis key informant. In the end, we have managed to provide embraceable insights for the three critical research issues on the universal change models, crucial elements for a change driven strategy in ERP implementation as well as future organization transformation. We believed this thesis provided a profound understanding for readers who

are eager to learn about change management for ERP implementation projects. Researchers can also use this paper as a reference for their further research on the topic matter as the business environment is continually developing, and there is going to be a new change model, new critical strategy elements, and new trends.

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APPENDIX 1

INTERVIEW QUESTIONS

1. To start with the interview today, **we would like you to share with us what your job is about as a digital transformation consultant?**
2. Based on your consulting experience in change management, **what is the change model you suggest to the company and why? What are the key elements for choosing a suitable model?**
3. As we are living in a world of exponential growth in digital information, adapting to the latest technology innovation and market trends is a must to maintain company competitive advantages. **How do organizations keep up to date?**
4. **How does organization align change management strategy while implementing ERP system?**
5. **Do you have any tips for organizations to pick the right communication platform and perform the communication stream in a harmonized way?**
6. A change manager leads a decisive in the success of ERP implementation project. This person focuses on three aspects of change concerning process, people and technology. **What do you think of characteristics, qualifications and behaviors of highly effective change leaders?**
7. As researched, the statistic shows that 66- 75% change initiatives' failures were caused by change resistance. Change leaders reveal that the resistance to change often comes from employees' sides. **What is your opinion on the real reasons why people don't change and how to manage change resistance successfully?**
8. For some aging employees, embracing new technology might not be a welcome acceptance and change resistance could be originated from this reason. Rather than working hard to learn new technology, they fear the loss of comfort, status and pay. **What should top managers do to help them overcome those fears?**

9. In a scenario where aging top managers are conservative to technology innovation, while Millennials are replacing the workforce and they are proactive, open-minded, and tech-savvy. **Should Millennials become leaders of digital transformation in organizations?**
10. Top managers are the ones who create change vision and initiative. **How would you suggest top managers to give realistic expectation and encourage the whole organizations to embrace the changes?**
11. The development of ERP system involves business knowledge from project team and assistance from support team to maintain the implemented functionalities and cover the ERP users' operational needs. Therefore, there should be a hand-in hand relationship between project team and support team, which originates from the beginning of ERP implementation project and lasts permanently. **What are the biggest challenges and how do organizations handle knowledge transfer and foster collaboration between these two teams?**
12. After deploying new ERP system, the work is not done yet. To utilize system functionalities, users need to be at a certain level of system using proficiency and able to pinpoint specific business specifications for system configurations. **In your view, how long will it take on average for users to use the system confidently and for the system to be maturely developed?**
13. "Data visualization capabilities enable change management dashboard that collect, merge, and present data in an understandable form while offering inquiry ability for better decision-making" - Esther Burt. Given the importance of data visualization, however not everyone is willing to learn how to use new tools. **How would organizations encourage those to adopt visualization tools? If you must suggest a visualization tool, which one is your selection?**
14. Similarly, project management is enhanced by relevant tools. **How do you evaluate the contribution of project management tools to the success of ERP implementation project?**
15. Artificial Intelligence is in its explosive era. **Do you think that organizations are ready to adopt AI into their way of working, and what could be the challenge on the way?**
16. To conclude with our interview, we would like to hear your career story. **How did you get started with ERP, and what lead you to this career path? What are you most proud of in your ERP**

career? What is the most important thing you have learned during your career? What advice would you give to someone who is new in their ERP career?