

# Strategic IT Planning – Deliverable 1.

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## Contents

Question 1.....	2
References (Question1) .....	6
Question 2.....	7
References (Question2) .....	10
Question 3a.....	11
Question 3b.....	12
Bibliography .....	17

## Question 1

*'Business / IT strategy Planning exists in an environment which has elements of Chaos Theory, Complexity Theory, Adaptive Systems and 'The Edge of Chaos prevails'.*

In order to discuss whether Business/IT Strategy planning exists in an environment which has elements of Chaos Theory, Complexity Theory, Adaptive Systems and where 'The Edge of Chaos' prevails I will first define Chaos Theory, Complexity Theory and Adaptive Systems.

Following this I will critically evaluate and investigate whether Business/IT Strategy planning exists in an environment in which 'The Edge of Chaos' prevails. I will then critically discuss complexity, learning and flexibility, including adaptive and generative learning, giving reasons why some organisations find it difficult to change.

Finally I will conclude as to whether Business/IT Strategy planning exists in an environment which has elements of Chaos Theory, Complexity Theory, Adaptive Systems and where 'The Edge of Chaos' prevails.

Chaos Theory, according to (Mintzberg et al, 1998) was originally developed in the physical sciences and is a way of better understanding and attempting to logically (and mathematically) understand non-linear, dynamic systems; these systems are ones where simple cause and effect does not necessarily apply. Non-linear systems are ones where even a minor and seemingly insignificant change can have massive, overreaching effects on the business as a whole and therefore the strategies needed within the planning process.

Complexity Theory is less mathematical than Chaos Theory, but still an attempt to understand and manage non-linear, dynamic systems that are a-periodic and unpredictable. Complexity Theory is a more hands-off approach to management and strategy than traditional management theories and is one of the leading theories in modern strategic planning. Complexity theory suggests that companies may be able to do more complex things without needing to resort to complex structures and very hierarchical management organisation. Indeed many of the most successful new businesses over the past decade in what has been termed the dot com era are founded upon this idea of allowing employees more flexibility and space to innovate.

Conversely it could be argued that the drive to make efficiency savings in times of economic recession such as those being experienced at the end of the first decade of the 21<sup>st</sup> century, will lead to (and are leading to) stifling creativity, lack of innovation and business stagnation. This is particularly seen in very hierarchical organisations in the public sector, where governments reduce budgets drastically forcing 'efficiency measures' such as limiting 'free time' and working more prescriptively and 'to rule' to be taken.

Adaptive Systems are self-regulating, self-managing systems that are dependent on their environment. These systems are often self-organising and free to make decisions themselves within the boundaries of its work together. These systems often form spontaneously such as a flock of birds or small teams of likeminded individuals working on small changes within an organisation that they feel can bring large impact and results.

So whilst too much control could stifle an organisation's ability to innovate and grow as a business entity it is also clear that completely chaotic working could ultimately lead to completely chaotic and therefore unpredictable results. To this end there is what can be called the 'happy medium', or that space in between, where innovation can be allowed to flourish, yet results can still be predicted and business constraints adhered to; this happy medium is termed 'The Edge of Chaos'. Eisenhardt and Brown (1998) state that the 'edge of chaos' is "somewhere in the middle between equilibrium and chaos".

However, Eisenhardt and Brown (1998) also state that complexity has to be tempered with a degree of flexibility. The 'traffic light' analogy suggests, the optimum level of structure is where there is some degree of flexibility. If a city block has no traffic lights then traffic becomes chaotic, with no control and no-one stopping to let others through, with inevitable crashes happening, yet if there are traffic lights on every single intersection then the flow of traffic will grind to an almost halt. Applying this analogy to business, it could be suggested that, if an organisation has too rigid structure in place then it can stifle creativity and innovation, however if there is no structure this can lead to chaotic working, near anarchy and again limited or no creativity and/or innovation.

About half of Google's employees (specifically those in research, development, design and the creative departments) are organized into teams comprising three or four people. Team leadership revolves, individuals work on multiple teams, and individuals can move between teams without HR approval. According to Shona Brown, Google's head of operations, "If at all possible, we want people to commit to things rather than be assigned to things ... If you see an opportunity, go for it." (Grant, 2010)

As Johnson, Scholes and Whittington (2008) state,

"Innovation occurs most readily when the organisation never quite settles down into a steady state of equilibrium and volatility arising from variation is given sufficient rein, though of course not to the extent that the organisation cannot function."

Grant (2010) states that as business environments become more complex, more competitive and less predictable, survival requires that companies perform at a higher level and with a broader repertoire of capabilities. Grant goes on to say that most business enterprises are unlikely to be successful with a unitary structure and will need to encompass multiple structures. Therefore an organisation needs to be flexible and able to *learn*.

Structures directed towards acquiring new knowledge and promoting change within the formal organisation have been described as *parallel learning structures*. For example IBM's massive online "Innovation Jam" creates temporary organisations biannually to harvest results of collaborative working, in a similar vein to the aforementioned Google working structures.

Battis and Prahalad (1995) give three reasons why some organisations find it difficult to change: (1) the existence of a historic dominant culture or logic in some companies, (2) some companies find it very difficult to 'un-learn' and then re-learn' new processes and procedures and (3) even previously successful Organisations need to develop the ability to 'challenge ideas'. So learning and change could be said to be fundamental to the success of any organisation, in creating a competitive advantage.

Between 2008 and 2012 Yahoo, once one of the strongest internet companies, and one of the largest search engine portals, have slashed 6000 jobs in a massive cost-cutting exercise to make it “smaller, nimbler and more profitable”, as it has struggled to keep up with its main rival Google. (BBC News, 2012)

And over a similar period of time, Nokia, once the market leader in mobile phones, has seen its market share eroded by Apple and Samsung. As Ben Wood, Chief of Research at CCS Insight when talking to Channel 4 News, told them, “In the old days, it was all about volume – now it’s all about value”. So when Nokia were leading the market they did so by developing economies of scale enabling them to produce in huge volume and sell cheap without needing to worry as much about the customer experience or inherent value in their handsets, due to quality and features. Now however Nokia are having to play catch up after more innovative companies with different strategies, such as Apple, have stolen a march on the market. (Channel 4 News, 2012)

Senge (1990) claims that there are two types of learning: Adaptive Learning, where the organisation just responds to the changing external environment (i.e. command and control) and Generative Learning where organisations anticipate the future environment.

The basic characteristics of the learning organisation can be seen below;

The basic character of the learning organisation:

- 1) Organisations can learn as much, if not more from failure as from success
- 2) A learning organisation rejects the adage “if it aint broken, don’t fix it”.
- 3) Learning organisations assume that the managers and workers closest to the design, manufacturing, distribution and sale of the product often know more about these activities than their supervisors.
- 4) A learning organisation actively seeks to move knowledge from one part of the organisation to another, to ensure that relevant information finds its way to the organisational unit that needs it most.
- 5) Learning organisations spend a lot of energy looking outside their own boundaries for knowledge.

(Adapted from Lampel, 1998)

There are however those who claim that even the learning organisation is constrained, since it tends to emphasize what is constant and persistent rather than what is innovative and revolutionary. (Mintzberg, 1998). So even if an organisation learns and changes it is

important that innovation is put at the forefront of this change, in order for an organisation to consolidate (or create) any competitive advantage it may have.

In conclusion to discuss whether Business/IT Strategy planning exists in an environment which has elements of Chaos Theory, Complexity Theory, Adaptive Systems and where 'The Edge of Chaos' prevails I have defined and critically analysed Chaos Theory, Complexity Theory and Adaptive Systems. I have also looked at complexity, flexibility and learning.

The strategic planning within an organisation does indeed have elements of Chaos Theory and Complexity Theory, with organisations continually striving to be able to predict the unpredictable. Complexity and adaptive systems are often embraced as companies try to form and consolidate sustainable competitive advantages, very often formed through continuous learning and continuous professional development; however, "The problem with the future is that there are more things that could happen than will happen". (Plato [liberally paraphrased])

## References (Question1)

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## Question 2

*'A resource-based strategy uses a company's valuable and rare resource strengths and competitive capabilities to deliver value to customers in ways that rivals find it difficult to match' (Thompson, Strickland and Gamble (2010) p. 110).*

In order to discuss whether a resource based strategy uses a company's valuable and rare resource strengths and competitive capabilities to deliver value to customers in ways that rivals find it difficult to match I will first of all critically describe and analyse what we mean by resources, competences and capabilities, along with what a 'Resourced Based View' is and how it differs from a 'Market Based View' of an organisation's market place. In doing this I will also look at the relationship between these entities. Following this I will give a critical account of Causal Ambiguity and Dynamic Capability, 'Resource Based View' (RBV) and 'Knowledge Based View' (KBV).

The Market Based View approach uses tools such as Porter's Five Forces, Porter's Generic Strategies, and Strategic Gap Analysis to look at the external market an organisation has and to decide upon best strategy within this market to gain a sustainable competitive advantage. As Thompson et al (2010) say; a company achieves sustainable competitive advantage when an attractive number of buyers prefer its products or services over the offerings of competitors and when the basis for this preference is durable.

Or as Grant (2008) puts it; when two or more firms compete within the same market, one firm possesses a competitive advantage over its rivals when it earns (or has the potential to earn) a persistently higher rate of profit.

However, strategic thinking at an individual organisation level based upon its resources, competences and capabilities is known as a Resource Based View (RBV). Henry (2008) says, that Resource Based View (RBV) are the internal capabilities of the organisation in formulating strategy to achieve sustainable competitive advantage in its markets and industries.

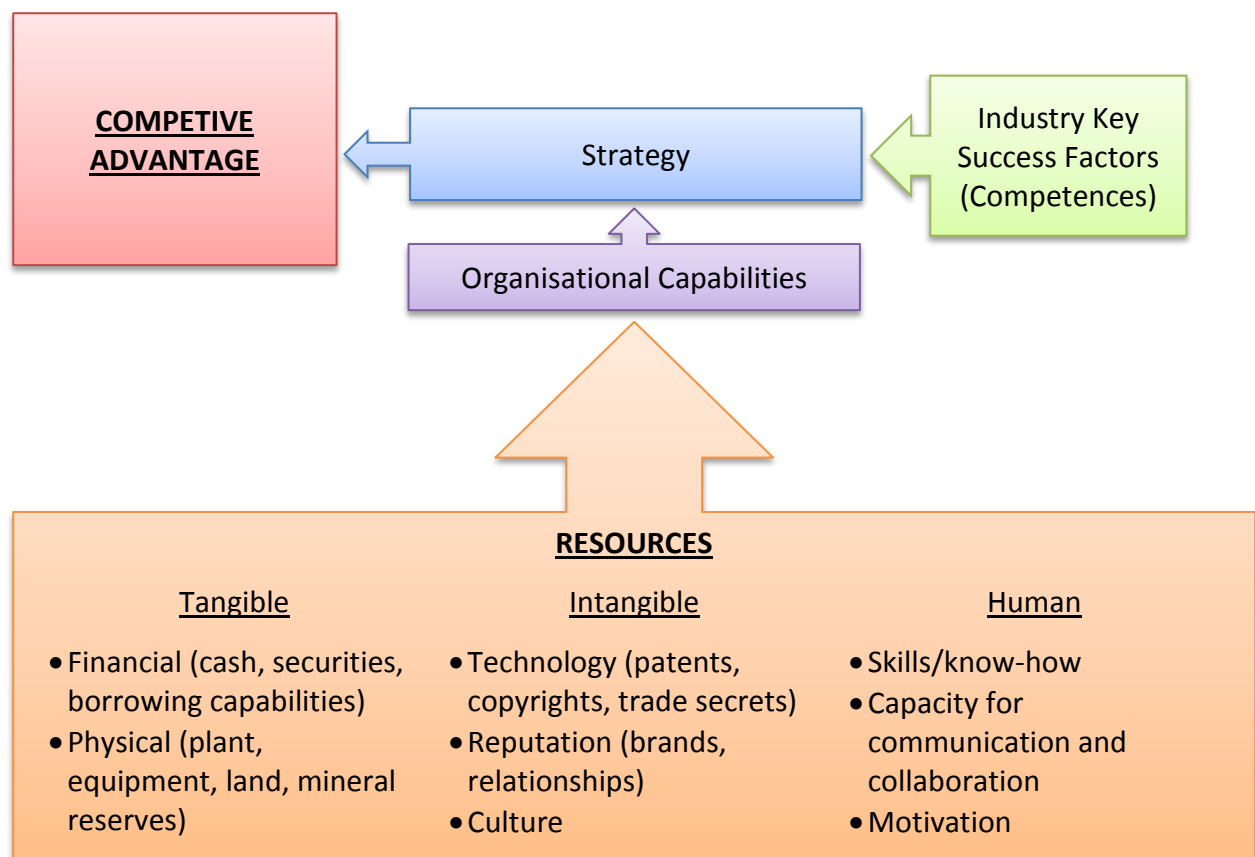
An organisation's resources are the inputs that allow an organisation to carry out its activities; resources can be either tangible [buildings, equipment, patents and financial

balance sheet] or intangible [brands, reputation, culture, technology, knowledge] Henry (2008), p. 127.

An organisation’s competences are the skills and attributes a firm requires in order to compete in the market place Henry (2008), p. 129. These are also known as Industry Key Success Factors.

An organisation’s capabilities provide the organisation with its competitive advantage; they derive from three sources an organisation’s: architecture, innovation and reputation Henry (2008), p. 129.

Individual resources do not confer competitive advantage, they must work together to create organisational capability. Grant (2010). So in short, an organisation needs to take into consideration all of these contributing factors in order to create sustainable competitive advantage, as can be seen below.



The links among resources, capabilities and competitive advantage  
Adapted from Grant (2010), p127



Barney (1991) however, claims resources and capabilities are in themselves a source of competitive advantage as: Barney says, resources and capabilities are 'heterogeneous' (each organisation has different resources and capabilities), and are 'sticky' (i.e. are unique to an organisation and not transferable easily from one firm to the next).

To this end, Lippman and Rummelt (1982) put forward the notion of 'Causal Ambiguity' i.e. uncertainty about which factors give superior performance as capabilities are difficult to replicate, adding to Barney's (1991) claims valuable resources are: rare, difficult to imitate and difficult to substitute, for example, Dell Computers operations and supply chain are difficult for rivals to imitate. Or Brompton folding bicycles will only continue to manufacture (more expensively in UK) rather than overseas (where it's cheaper to manufacture) as there is a greater risk of imitation and skill substitution of manufacturing if operations moved overseas).

Conversely Teece et al. (1997) use the term 'Dynamic Capability' to mean the ability of a firm to integrate, build and reconfigure internal and external competences to address rapidly changing environments. This is often seen in economies of scope where an organisation once manufacturing a product can quickly utilise its existing skill-sets and equipment to move into a new field. Apple computers were able to very quickly move from desktop computers, to handheld music devices (iPods), to iPhones and now iPads, due to being a very dynamic and capable organisation. Dynamic Capabilities thus reflect an organisation's ability to achieve new and innovative forms of competitive advantage given path dependencies and market positions.

Resource Based View (RBV) therefore believes that capabilities are the key to competitive advantage. However some also consider a Knowledge Based View (KBV) which believes that knowledge is the key to competitive advantage.

In conclusion, I have critically discussed whether a resource based strategy uses a company's valuable and rare resource strengths and competitive capabilities to deliver value to customers in ways that rivals find it difficult to match. I have critically described and analysed what we mean by resources, competences and capabilities, along with what a

'Resourced Based View' is and how it differs from a 'Market Based View' of an organisation's market place. In doing this I have also look at the relationship between these entities, along with a critical account of Causal Ambiguity and Dynamic Capability, 'Resource Based View' (RBV) and 'Knowledge Based View' (KBV).

It can be seen that an organisation must indeed harness its valuable resources, competences and capabilities, along with taking into consideration market forces when devising its organisational strategy if it is to gain a sustainable competitive advantage.

### **References (Question2)**

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Thompson, A. Peteraf, M. Gamble, J. & Strickland III, A. 2011. *Crafting and Executing Strategy: Concepts and Readings*. 18<sup>th</sup> ed. New York: McGraw-Hill Irwin

### Question 3a

Compare the BPI methodology to the SAP ERP package with respect to the following functions:

- *Integration to existing legacy IT / Business systems,*
- *Revolutionary/Evolutionary implementation path,*
- *Market share of international ERP market,*
- *Provision of a 'total' turnkey solution,*
- *Application that serves the total IT / Business needs of the Organisation.*

<b>No.</b>	<b>Function</b>	<b>BPI</b>	<b>SAP</b>
1.	Integration to existing legacy IT / Business systems	BPI is not suited to integration to legacy IT/Business systems.	SAP (Systems, Applications, and Products in Data Processing) however is more suited to legacy IT/Business systems.
2.	Revolutionary/Evolutionary implementation path	BPI is revolutionary, creating functions from scratch.	SAP is evolutionary, adapting and altering functions as they evolve
3.	Market share of international ERP market	BPI is purely a methodology.	SAP however is both the methodology and software. SAP applications and services are used by more than 183,000 customers worldwide. SAP has more than 55,000 employees and sales and development locations in more than 50 countries worldwide, with revenue of €12.5 billion for the year 2010.
4.	Provision of a 'total' turnkey solution	BPI does not provide a total turnkey solution for all a business' requirements.	SAP offers total turnkey, off-the-shelf solutions to businesses to suit all of their requirements.
5.	Application that serves the total IT / Business needs of the Organisation	BPI only serves specific needs of the organisation; i.e. procurement or document control (as in the Sweetwater case study).	SAP serves all of the needs of an organisation, integrating all organisational operational systems.

### Question 3b

*Develop IT Business Process diagrams - Levels 1, 2, 3 for the 'Document Control' task for accompanying 'Sweetwater' Case study. Make and state any reasonable assumptions you take.*

*Assess the role of the following in Business Process Improvement:*

- *'Business Process Change matrix'*
- *'Final Business Process Blueprint'*

Business Process Improvement (BPI), is the recognition that as an organisation changes over time, its process may become unfit for purpose as it evolves. The key to BPI is to detach from the way in which a process is currently organised and to begin with the question: "If we were starting afresh, how would we design this process?" (Grant 2010)

The Business Process Change Matrix, as part of BPI, can help managers identify critical interactions among processes. In particular, this tool helps managers deal with issues such as how quickly change should proceed, the order in which changes should take place, whether to start at a new site, and whether the proposed systems are stable and coherent. (Brynjolfsson, 1996).

The Business Process Change Matrix, specifically identifies where an organisation is at the present time, and then looks at where it wants to get to. It is, as the name suggests, a matrix process that identifies tasks, costs, timing, and skills and resource requirements to achieve the desired goals. (See figure 3.1 in tabular form)

It provides a systematic means to judge those business practices that matter most. It highlights interactions among these practices and possible transition difficulties from one set of practices to another. It encourages various stakeholders to provide feedback on proposed changes. And, it uses process interactions to provide guidelines on the pace, sequence, feasibility, and location of change. (Brynjolfsson, 1996).

Process Step no.	Task Description	Current Status	Estimated Duration	Skills required	No. of Resources required	Cost

\*Add rows as required

Figure 3.1 – Business Change Matrix

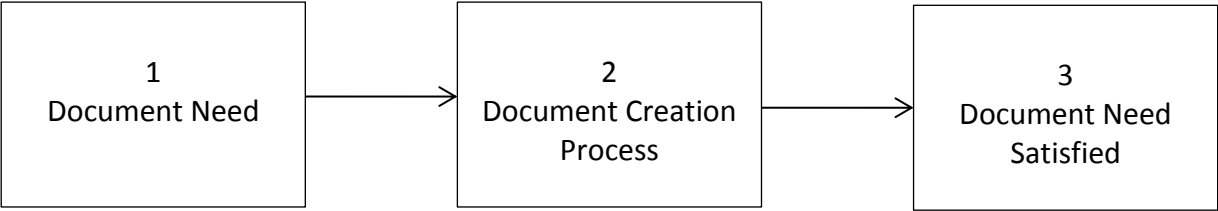
The Business Process Change Matrix is one of the seven steps involved in the Business Process Improvement (or Reengineering) process (See figure 3.2), with the final step being the development of the Final Business Blueprint.

Step	Step Description
Step 1	Identify the current business status (i.e. status quo).
Step 2	Develop the three 'Business Process Diagrams' for the new business status (i.e. Level 1, 2 and 3).
Step 3	Develop the three 'Business Process Descriptions' (To complement the three level Business Process Diagrams developed).
Step 4	In parallel, constantly develop the following four registers: Open Items list, Benefits Register, Information Data Dictionary, Risks Register.
Step 5	Develop the Business Process Change Matrix
Step 6	From the Information Data Dictionary derive the IT Blueprint (Technology).
Step 7	Develop the final Business Blueprint (i.e. Technology, Processes, Structure, and Culture).

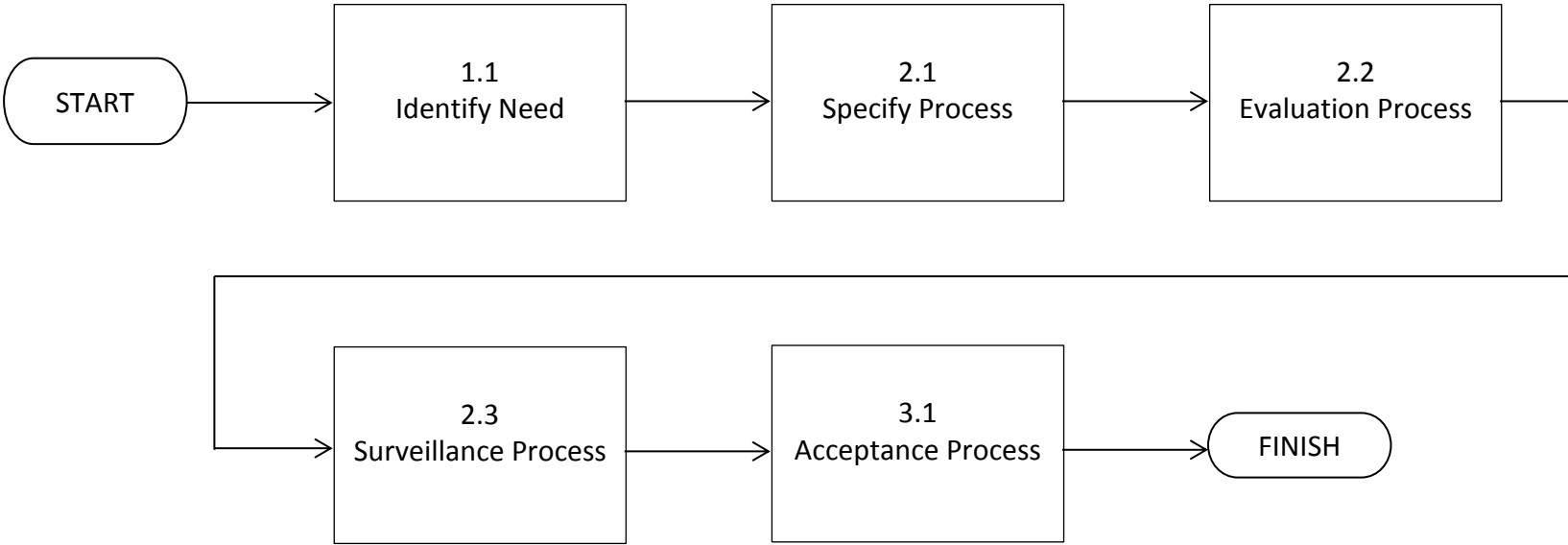
Figure 3.2 – BPI Process

The Final Business Blueprint is the end goal of Business Process Improvement (BPI). It is a plan to show the transformation required within the whole organisation or certain sections or departments within an organisation encompassing the organisation's IT technology, its business processes, its culture and its hierarchy.

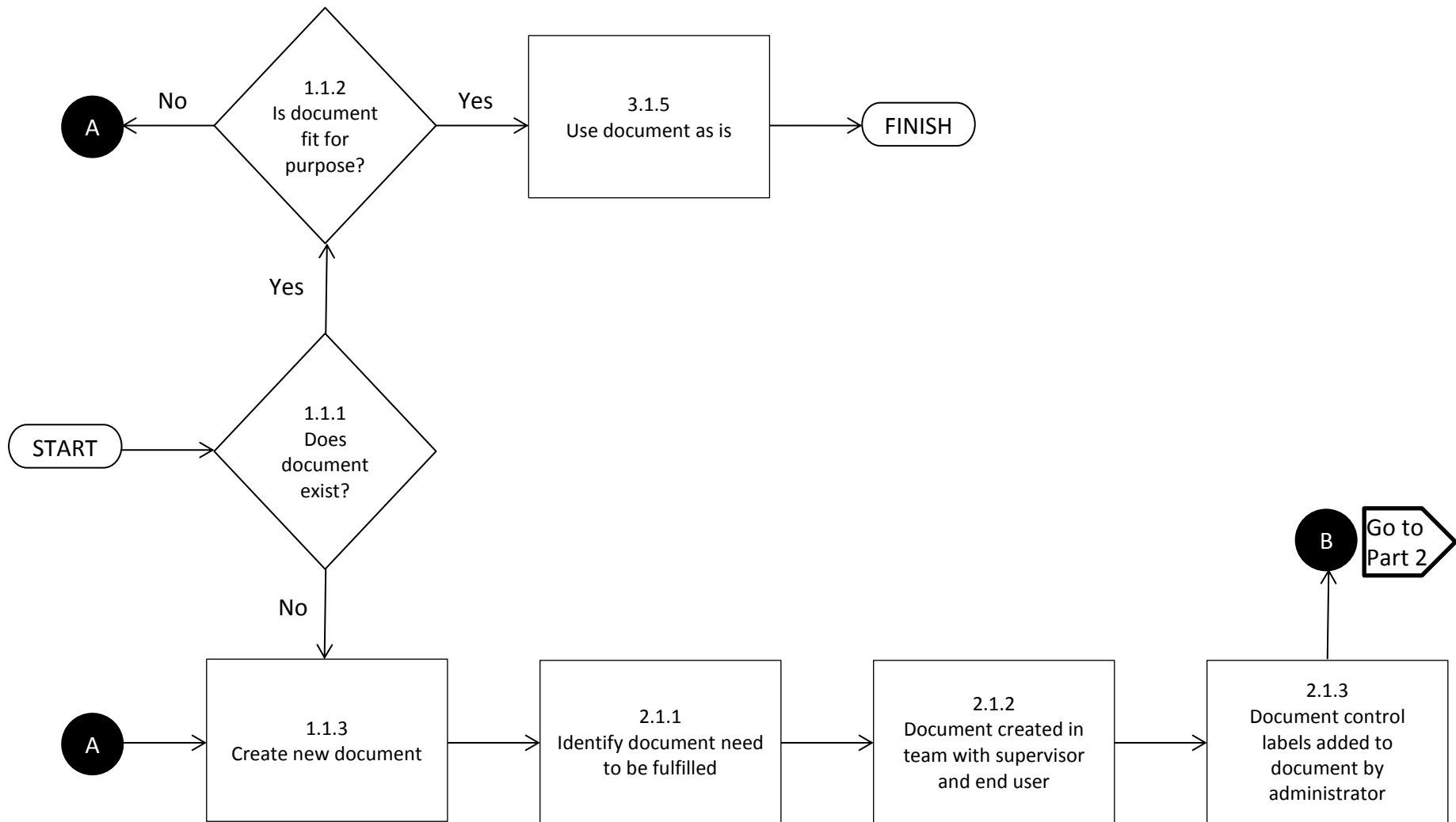
**Document Control Process  
Level 1**



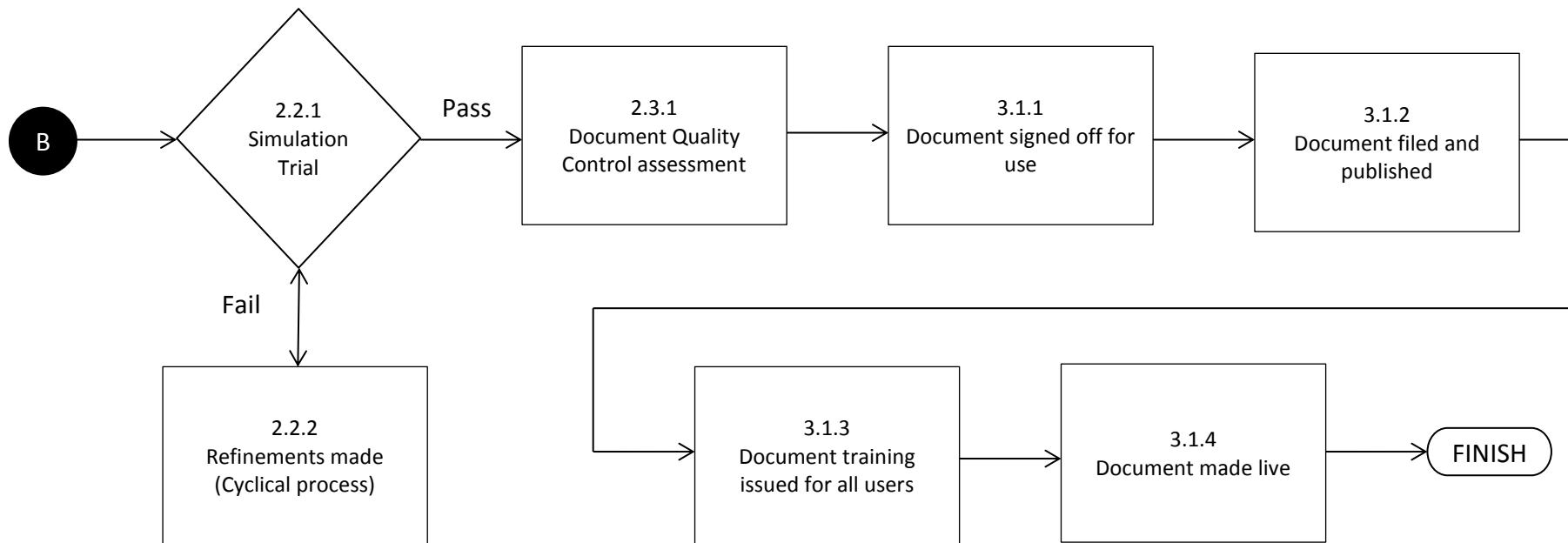
**Document Control Process  
Level 2**



**Document Control Process  
Level 3 – Part 1**



**Document Control Process  
Level 3 – Part 2**



**Assumptions:**  
 Refinements (stage point 2.2.2) will ‘eventually’ resolve any issues if needed, cyclical process.  
 Document passes QC assessment in order to go to sign-off stage.  
 Processes are in place for quality control, document publication and administration, assuming training is successful for users.  
**Successful** training is done for ALL users before making live.



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