BUSINESS SCHOOL
BESIGHEIDSKOOL
SEKOLO SA KGWEBO

SOLEMN DECLARATION – INDIVIDUAL ASSIGNMENT

Solemn declaration by student

Module: Technology Management_____
Module Code: MBAB 821_____
Assignment No.: 1_____

I ___Botle Bosiu_____ declare herewith that the assignment which I herewith submit to the North-West University as partial completion of the requirements set for the MBA degree, is my own work.

Signature of student _____Bosiu_____Student number__30980135_____

Signed at __Vaal_____ this _14_____day of _____2020_____

1.1. TECH-ENTREPRENEUR

SUMMARY OF THE IDEA

Agriculture has always been an integral part of the South African country's economy. It involves the "cultivation of the soil to grow plants and the raising of animals for human needs" (Bareja & Ben, 2019). Agriculture is even more important today due to the fast growth of population. Aerobotics technological company facilitates data management for drone users in the farming industry. According to (Fredericks, 2018), this is a device that reveals, stressed trees and identifies pests and diseases without physically being on the farm, and converts them into machine readable characters. The app apprehends high resolution pictures of suffering/strained trees, which is then processed through Aerobotics tree crop and vineyard pest and disease detection. Using artificial intelligence and machine, the useful technology allows for pests and disease to be recognized, and the information transferred through push notifications that can be used by the farmer. In a nutshell, the app transmits the route to a drone, that lifts off and flies to unearth stressed trees, captures the image and loads data.

APPLICABLE INDUSTRY

Aerobotics offers their services to Farmers. Aerobotics's key target market is clients within the agricultural sector, that is consumers and companies. Therefore, the industry applicable to their product or service is the agricultural sector. This kind of technology is strictly designed to help farming business to manage their crops and monitor stressed trees. South Africa, as a major role player of agricultural produce, in the industry and a big contributor of economic growth in the country it is imperative that solutions should be sought after to overcome the persistent pests' problems faced.

THE INVENTOR

Aerobotics was started by the following co-founders, Benji Meltzer (CTO) and James Paterson (CEO). Benji is an avid tech entrepreneur and designer, who studied a BSc in Mechatronics Engineering at UCT in 2011. Has acquired vast knowledge of software engineering and analysing, after working at the Cyest Corporation in

Johannesburg, Chile and Australia. Furthermore, he holds a Msc in Neurotechnology from a London College called Imperial. James was raised on a fruit farm, and has a strong passion for generating inventions, robots and entrepreneurship, He possess a BSc in Mechatronics Engineering from UCT. Furthered, his studies with a Masters in Aeronautics and Astronautics at MIT. He has worked on big projects such as gimballed rocket control, path planning algorithms for unmanned aerial vehicles just to mention a few.

THE BUSINESS MODEL

According to (Cremades, 2020), “a business model contains:

- The product/service your business believes has value for the customer.
- The market niche and main target demographic
- How you will deliver your product to this demographic
- The costs of bringing your product/service to your target market”

The new Aerobotics innovation or technology has a working business model as well as business flavour in it. Most of the seed companies agro-chemical companies will be interested on the innovation use it widely for their products. The innovation will help agricultural input companies to meet the demand for food and remain competitive with new digitally driven business. This new technology will be essential in increasing agricultural productivity while reducing the use of fertilizers, crop protection inputs, and naturally and human resources. Input companies, as well as other players in the agricultural industry, will provide or are looking to provide farmers with integrated and personalized digital solution to improve their site operations by including customer-specific information on farm operation agronomics, climate and local condition.

Key Partners

- 3rd Party distribution
- Technology suppliers
- Technology maintenance

Key Activities

Manage orders

Clearing and Forwarding

Warehouse

Packaging

Courier services

Key Resources

Employees

Technology

Equipment

Value Proposition

Fast delivery and convenience

Time and money saving

Quality customer service

Accessibility to all

Ease of Payment

Customer Relationships

Customer centricity service

Personal delivery

Channels

Digital channels

Website, mobile application and social media

Traditional channels

Warehouse, branches

Customer Segments

Private corporations

Online retailers and wholesalers

Government

Private Individuals

Cost Structure (what are the major costs incurred by your business)

Investment Costs

Operational Costs

Tax

Technology maintenance

Insurance

Labour hiring and training

Revenue Streams

Delivery of our product

Warehouse storage

Clearing and forwarding

Packaging

WHY IT IS IMPRESSIVE?

The key features of this innovation, and the massive impact the technology will have on the agricultural sector, is what makes the technology impressive: This technology will have a massive impact on the agricultural sector because of the following reasons:

- It improves yields
- It is efficient, as it improves various processes to bring value chain
- It is a feasible and profitable idea
- Plays a pivotal role in assisting with food security

CONTRIBUTION TO ECONOMIC AND SOCIAL ENVIRONMENT

Economically speaking:

Aerobotics will increase supplies of raw materials: The agricultural sector supplies raw material to secondary industry and processing plants to manufacture final goods that are ready for use by consumers.

Aerobotics will help the sector earn foreign currency: More agricultural products will be exported and foreign currency generated through these exports.

Aerobotics will help farming employers with jobs: More job opportunities will be created in the agriculture sector by farmers i.e. production, processing and secondary activities therefore the sector employs more people.

Aerobotics will assist create a market for goods and services: Farmers create huge markets for manufacturers goods and services as they need inputs for their production and marketing purposes.

1.2.

FEAR

According to (Gower, 2015), a lot of people and companies fail to meet greater heights because of fear. Generating ideas and turning them into opportunities, doesn't guarantee the idea will work. (Kazi, 2019), points out that many people are reluctant to start a business idea because of everyday fear, such as balancing work and life. (Gibson, 2005), suggests that when looking for a business idea don't concentrate on the problems involved, look for the opportunity in it. In his article, (Tracy, 2016), argues that it is much easier to capitalise on the mistakes and weaknesses made by the original inventor and to improve on products and services. In a nutshell, entrepreneurs should not be afraid of failure, as it is the only way to learn, a good example of an innovator who failed because of fear is Kodak. Kodak failed to keep up with the digital revolution, for fear of cannibalizing its most powerful product lines.

Most small business entrepreneurs find it difficult to succeed with innovations, because they lack resources such as knowledge, employees, finances and public relationships (Lemberg, 2019). (Gower, 2015), explains that most people think that original inventions are exciting. However, the entrepreneur usually needs money to educate the market and build up an infrastructure, for example a distribution channel. Therefore, it is vital to have resources. While (Kucera, 2015) states that, good business ideas often come from low funded researches. According to (Kirsner, 2018), many big businesses have a history of established research and development departments, so budget is not an obstacle. According to (Innovation, 2020), MoviePass launched a subscription movie ticket service, while the subscriptions spiked to 3 Million, the company started to lose money, and clients left the company and subscriptions diminished to 225000 in 2019 April, five months down the line the company shut down.

LACK OF TIME

(Kucera, 2015), proclaims that "Great way to build a culture of innovation and strong execution is to work with limited resources, and that starts with time". (Gower, 2015), accentuates that failing to make time to take a more in-depth view to promote creative methods of generating money making ideas, will affect the long-term survival of a company. (Gough, 2018), contends that 82% of employees maintain that daily challenges in the workplace, is the sole reason there is no innovation in

some companies. Furthermore, (Fallon, 2015), highlights that business frequently gets too attached in accomplishing short term performance criteria, which excludes time for creative and innovative idea thinking and collaboration. (TNCR staff, 2018), cites that time management is a key principle for leaders in IT, both at individual and team level. In 1980s a portable record player was dubbed a combination of poor timing and short sightedness by its creators. It was poor timing, as it came out pre the release of cassettes players and a lack of sight because, the record player was too big to be carried out.

1.3.

CUSTOMER EXPECTATION

According to (Rossouw, 2018), the 4IR will massively continue to impact customer service. Consumers, are now having benefits, previously not known before:

> "Smart transport routing can increase the accuracy and on-time rates of business deliveries, meaning that fewer customers will suffer from delays or, in B2C sales, disruptions of their own.
> Real-time information can boost visibility, enabling an increased degree of customer-side transparency as to stock levels, thereby empowering customers to make more informed ordering decisions.
> Increased supply chain transparency can drive smarter ordering and capacity management, leading to fewer stock shortfalls, and therefore fewer customer-facing disruptions."

PRODUCT ENHANCEMENT

The 4IR will help revive or modify products and services, with extra capabilities, ultimately increasing their value through innovative ideas, (Rossouw, 2018). The 4IR could have more customised products for customers, more especially in manufacturing. More customers could be included in the process of product innovation to meet their needs. For organizations that are keen on leveraging from the new emerging technologies, that are aimed at customer pain points. A lot of customer data can be obtained easily, which can be used to research thoroughly on the market needs.

COLLABORATIVE INNOVATION

Access to connectivity and creative thinking, or innovation allows collaborations and partnerships.

SURVIVING THE 4IR

Businesses should incorporate, adopt new emerging technologies in their operations and business model.

Technologies such as Artificial Intelligence, Big Data and Block chain are imperative in many industries.

Rapid change is inevitable due to the new revolution, business leaders can assist their companies to remain competitive in this manner

2.1.

The block chain model can be explained as a digital ledger or set of transactions which allows humans across the world to fulfil a transaction directly without the use of intermediaries such as banks, which in the current monetary system is owned by the banks. While Mobile Technology is a component that is largely utilized in cellular communication and other relatable parts (Macwan, 2017). It is centred around a platform called Code division Multiple access. The block chains are decentralised with no clearing house. The key features of the block chain technology are (Crouch, 2017):

- No intermediaries in between, everything is decentralised.
- Multiple computer networks are unearthed across the world, called nodes, hold individual copies of each ledger. They use peer-to-peer (P2P) technology to link to each other. The P2P technology regularly improves information across the different nodes and thus ensuring that each computer system carries same information.
- Block chain technology needs no trust. There is no single point of failure or approval of every transaction.

- It has independent verification of each transaction and it is secured. It uses cryptographic technology as part of initiating the safety attributes needed in every deal concluded.

According to (Yaga, et al., 2018), blockchains are waterproof and tamper evident digital and distributed ledgers which are implemented.

The Financial services, in particular the banking sector, has been established to be inherently fragile because of the ability to be influenced and manipulated by central parties for different reasons. Many a times, it has been discovered to have led to a financial crisis or fall of the banking or financial service in the entire world. According to (ING, 2012), since banking moved online over 1.2 million people have downloaded the app, this has increased interaction between banks and customers. Users of the mobile app are now able to frequently meet their payment obligations and save on valuable time. In addition, many businesses rely on mobile technology to increase revenue. platforms such as Pay pal have made online purchasing easier, while also entertainment business like Cinemas could design an app for booking tickets for clients. For marketing people, it is now easier to sell goods and services through mobile technology. The block chain model in the financial service industry is presently immune by central entities, as it is in all likelihood diminish the influence and significance of bankers at central. The opposition of the use of block chain currencies are pointing at its high fluctuations as the obstacle to currency stability. Even though the block chain technology is still at its early stages it however provides immense potential benefits, like:

Smart contracts (Ethereum)

Smart contracts are blocks which contain a code which must be executed before the contract is fulfilled. Block chain technology with its trustless and secure features to craft and execute such contracts

Cloud Storage

The cloud storage has allowed the arrival of the big data technology which released the artificial intelligence. The criticism of the cloud storage technology is that it is

centrally stored in locations. This offers the possibility of abuse, moreover the personal information/profile of individuals. The block chain technology sweeps away the risk as it is centralised and secured.

DIGITAL IDENTIFICATION

Regimes over the world profile pervasive ID fraud and theft. The block chain model offers the possibility of improvements in security, against forgery, ID and theft of passports.

DIGITAL VOTING

The use of usual technology has provided nationals and authorities with a lot of headache because it is easily hacked and abused. The block chain technology seems to provide a better and secured solution to the perceived shortcomings in the current systems. Its independent verification features provide the much-needed integrity in the digital voting systems.

In some place's citizens are made to vote by a show of hands and the Blockchain will curb away such a practice and its associated risks to those who are casting their votes. Shop stewards for unions in the workplace can quickly campaign their members' votes covering various regions to support a strike action through technology. The end result will be obtainable at a twinkle of an eye. This will cast no doubts about the honesty of the process.

Political parties can now allow its representatives to vote without being detected on how they have voted. Recently courts had to intervene and make some rulings on secret voting by members of parliaments and municipal councils. In future there will be no need for such expensive litigation processes because the institutions will adopt a safe and secured voting system (block chain technology), as a norm.

BENEFITS OF USING MOBILE TECHNOLOGY

Increased efficiency and productivity of staff

Improved quality of service and flexibility offered to the business' clients

Provides the means to accept payments without connection (wireless)

Higher communication ability in the work environment and out of the workplace

Leads to better networking capabilities

2.2) HOW WOULD I CHANGE MY ORGANISATION, SASOL INTO AN EXPONENTIAL ORGANISATION

BACKGROUND

Sasol is an integrated energy and chemical multinational company, which is headquartered in South Africa. Sasol's establishment in the 1950's was based on the gas to liquid (GTL) and coal to liquid (Fischer Tropsch) Technology, which is used to convert coal to synthetic fuel and other chemicals. Sasol is primarily listed in the Johannesburg Securities Exchange and secondary listed in the New York Securities Exchange.

Sasol has over the years developed a portfolio of base chemicals, which tend to attract high overheads and the same time help to sustain the business. It has over the years been noticed that the overheads grew above the competitors and acceptable benchmarks.

Sasol is divided into operating hubs, and the Group Technology units. The Group Technology is made up of the Research and Technology Division; Engineering and Professional Services Division and the Capital Projects Division. Group Technology gives Sasol an ability to research and develop technical solutions and new technologies. While the Capital Projects and Professional Services enable Sasol to execute projects to the highest standards available with minimal support from outside the organisation.

PHOENIX PROJECT

During 2013, the firm set off on restructuring exercise under the banner of Phoenix Project with the support of Bain and Company. The company had been organised

along the concept of business units. The investigation by the consultant revealed that the organisation was struggling as a result of:

- Business complexity relating to a fragmented operating model.
- Organisation complexity relating to misalignment between functions and business.
- Process complexity relating to our procurement, maintenance and capital project management.

The new operating model which had been initiated was aimed at introducing an agile and nimble, and fit for organisation which is fit for purpose.

DELIVERABLES OF THE PHOENIX PROJECT

The primary objective of the Phoenix Project was business sustainability. This required the focus and specifications of the key deliverables:

- Reduce and achieve a savings of R3 billion per annum. The object is to improve and maintain cash liquidity at all times, as part of business sustainability
- Introduce and sustain a high-performance culture across the organisation. The high-performance culture was to be achieved through the teamwork and collaboration.
- Reduce organisational complexity and bureaucracy, and promote simplicity and collaboration across the organisational levels.
- Drive transformation, diversity and inclusion

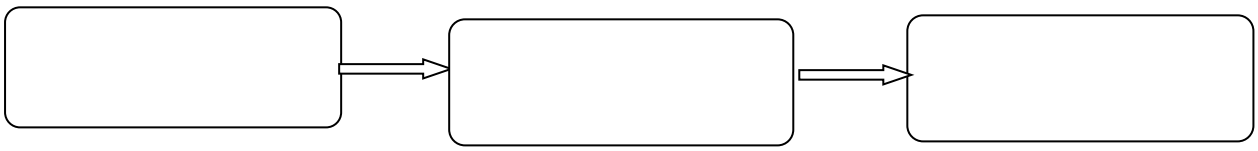
NEW OPERATING MODEL

Prior to the Project Phoenix every business operating business would be run at full capacity and the sales team thereafter will have a responsibility of selling all the produce. This at times would be sold on credit or at a discounted price. The new operating model would be designed and fashioned along the lines of just-in-time

operating model. The production drivers would be the market demands and therefore optimise the selling prices.

New model:

BUY **MAKE** **SELL**



Important focus areas of the new operating model are:

- Ensure operations stability, reliability and maintainability through operations excellence
- Drive group wide fit for purpose and cost-effective enterprise resources planning (ERP): SAP plat forms
- Reduce environmental impact of our operations
- Implement world class projects execution through Capital Excellence
- Increase focus on performance management and recognition

SASOL FIRM AS THE EXPONENTIAL

Sasol Firm might have to prioritise and focus on making sure that the company saves cash so that it can maintain its daily operations instead of approaching banks for increases in limits, overdrafts and other bank loans.

The new model will benefit the company by decreasing stock and the associated costs. The company only needs to manufacture what the markets need/wants and better invest money as opposed to tie in cash on inventory management expenses.

The organisation should promote effective collaboration with some of the world's renowned and reputable companies specialising in project management which will allow and grant Sasol access to their knowledge, expertise and resources. The

company needs not, hire many engineers on projects, however they may still seek entry to get close to a pool of experienced and talented project engineers available across many engineering contractors.

The firm has currently made key investment in a wide number of new technologies and programmes like the SAP, Skype, Talent@Work and etc. Technological softwares from time to time needs to be scrutinized for significance and opportunities for advancement and optimal maximization.

Inclusivity and Diversity management should be considered as a strategic importance which can grow the high-performance culture in the company.

The firm has widely invested in the digital age and must benefit from the ample technologies that are readily obtainable to carry and boost the marketing and sales ventures and the supply chain management.

Recruitment costs can be lowered by using obtainable digital platforms such as the Linked In, Pnet among others. The firm, so far has paid millions of monies in training and development workers. This tends to provide an accessible pool of skilled employees.

All projects space flexi contracts with projects engineers should be contemplated rather than permanent job opportunities. Project engineers should be brought on a contract basis, free-lance and thereafter leave, when there is no need arising for their service anymore.

For many Exponential organisation, the company calls for revitalisation itself from time to time to maintain competitive advantage and relevance. Companies that stop to revitalise themselves, eventually cease to exist.

2.3)

FAILURE TO REINVENT ITSELF

Kodak's claim to fame was a film technology, and kodak was the first to do an electronic camera, they were also the first with a digital printer and a couple of other achievements or firsts. According to Scott, cited in (Brand Minds, 2018), lessons to

be learned from Kodak are narrow. Kodak's mistake is, their inability to adopt new business models, which opened up for disruptive technologies. The company made a digital camera, invested in the technology, and had mutual understanding that photos would be shared online. What went wrong for Kodak was being unable to see that sharing online photos was the new and in thing business, instead of an alternative to grow the printing business.

COMPLACENCY

In the same article, Kotter cited in (Brand Minds, 2018), complacency made the organization to overflow as it was observed in the late 1980s. Kodak already showed cracking signs, long before the digital revolution, it was when Fuji began performing better with the old technology. Kodak sold off two of their patents, one to canon and the other one to smart technologies, and what happened when this disruptive innovation took the world by storm, they started putting it into cell-phones and now you could take pictures anywhere, the old way of taking a picture and out it in an old photo album and over the years went lost. With the solid and strong complacency, Kodak's top management couldn't prioritize the problem with urgency and thrive at the opportunity presented.

LACK OF ORGANISATIONAL AGILITY

Mendez, cited in (Brand Minds, 2018), mentions that the company's lack of creativity affected Kodak in terms of obtaining and maintaining a competitive advantage. By misinterpreting the line of work and type of industry it was functioning in, they lost customer support and clients shifted towards a company in tune with the digital age. When pictures are electronically stored, they are easily printed on to photograph, photo-type paper and that was disruptive innovation for Kodak. Problems at strategic level, were addressed inadequately and flaws in manufacturing process became very costly, and since Kodak's profit margin was high, they avoided risky decisions, and opted to create policies and procedures to maintain their status quo. This killed Kodak, and it nearly went bankrupt for a couple of times.

ADDRESSING THE KODAK SITUATION

I would have transformed and changed the manner in which strategy, business models and innovative management is currently looked at**.**

I would have prepared Kodak for a radical and revolutionized shift, necessary to go into the future. Instead, of protecting the company's competitive edge.

To avoid complacency creeping in, I would have suggested that innovators or creative thinkers have a lot of say and that they are listened to at top level

I would have recommended an adoption of agility as a company strategy for growth.

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