EMERGING AND DISRUPTIVE TECHNOLOGIES FOR MALAWI

Eng Shaibu Mludi

Presentation Outline

- Introduction
- Identification of Technologies
- Business Strategy Model
- Corporate Knowledge
- Managing Innovation
- Emerging Technologies
- Conclusion

INTRODUCTION

- Emerging and disruptive technologies correlate with the MW2063 Vision to impact economic growth and self reliance

- MW2063 development provides a technological push and also market pull to the public

- Innovative business model applied for the implementation of MW2063 (external and internal factors) indicates the need to enhance culture

- The impact of knowledge use appropriately inherents economic growth for the country

- Emerging and disruptive technologies should be treated as a business strategy through innovation to remain competitive
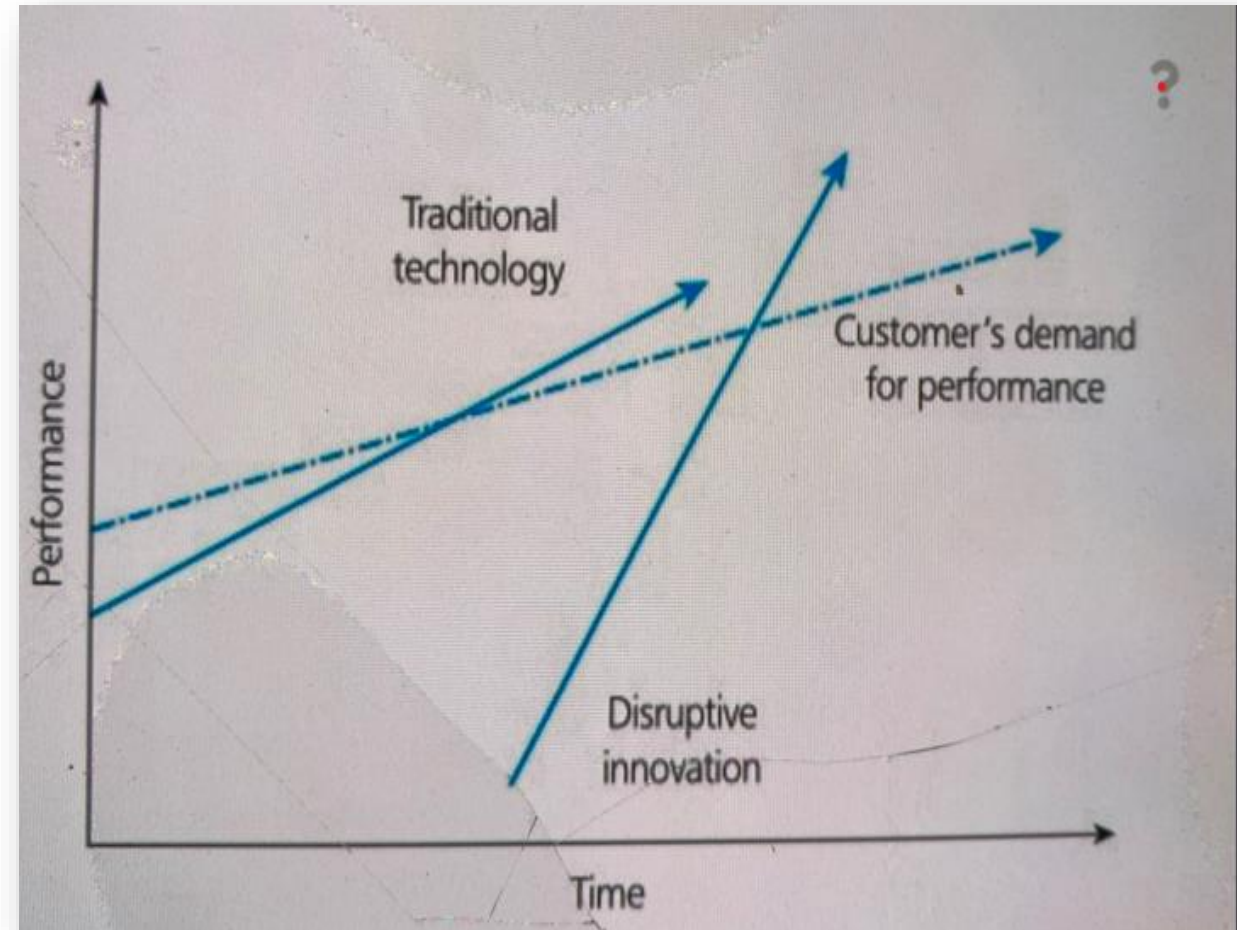
IDENTIFICATION OF TECHNOLOGIES

Emerging technologies (original, innovative technologies)

- Practical application and not yet adopted by the industry (climate smart agriculture) have the potential to drive significant change.
- Emerging technologies may drive more incremental innovation (iPhone) due to continuous improvements

Disruptive technologies (existing technologies)

Adopted at a scale, drive significant change and innovation in practice (gramil).

Radical innovation provides new product for immediate use

Example of Disruptive Technology

Business Strategy Model

- Engineers makes life into reality and require good leadership to mentor innovation
- MW2063 indulges the external factors with committal statement to support the Malawi vision (Parly, NGOs, Traditional Leaders, Judges, etc)
- The internal factors require resource-based knowledge and Engineers need to:
  - Use the intellectual Property Rights to be competitive with the emerging technologies and use of local resources
  - Develop standards to enhance value, global competitive and economical growth
  - Assist in providing modern finance through integration of blockchain and reduce time to access financial services

Design Factors for Technologies

Promotion targets the wider public with the objective of raising awareness of the benefits to design in many different ways.
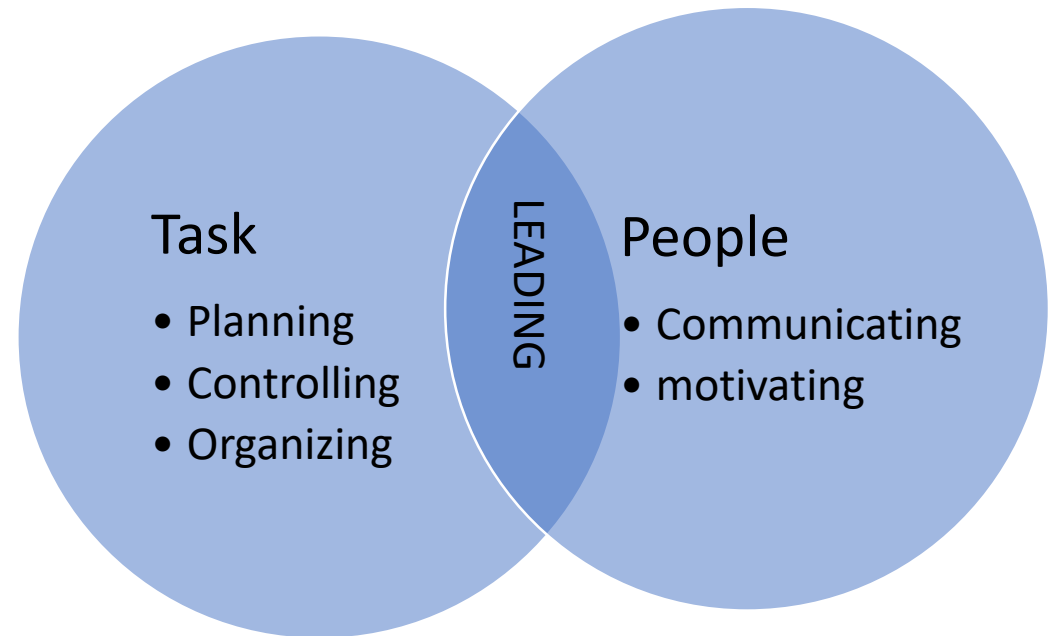
Support helps organisations to use MW2063 to improve businesses and achieve tangible outcomes

Education targets designers and engineers as well as professional training to design MW2063 pillars for each industry
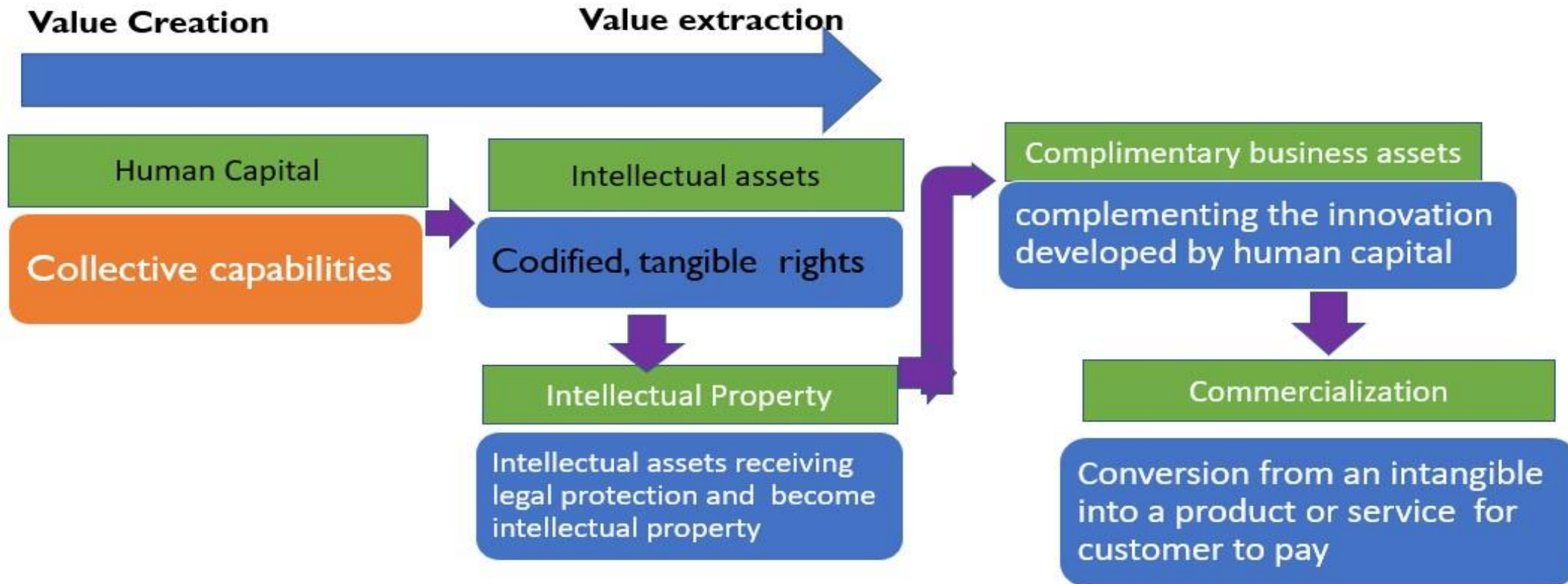
Design policy sets of principles, purposes, and procedures about intentions on a particular development plan.

Innovation Implementation

- MW2063 provides the people of Malawi participate freely the developmental plans

- Continuous improvement towards achieving the vision

- The leadership focuses on motivating and communicating with people to plan, control and organize the developmental goals
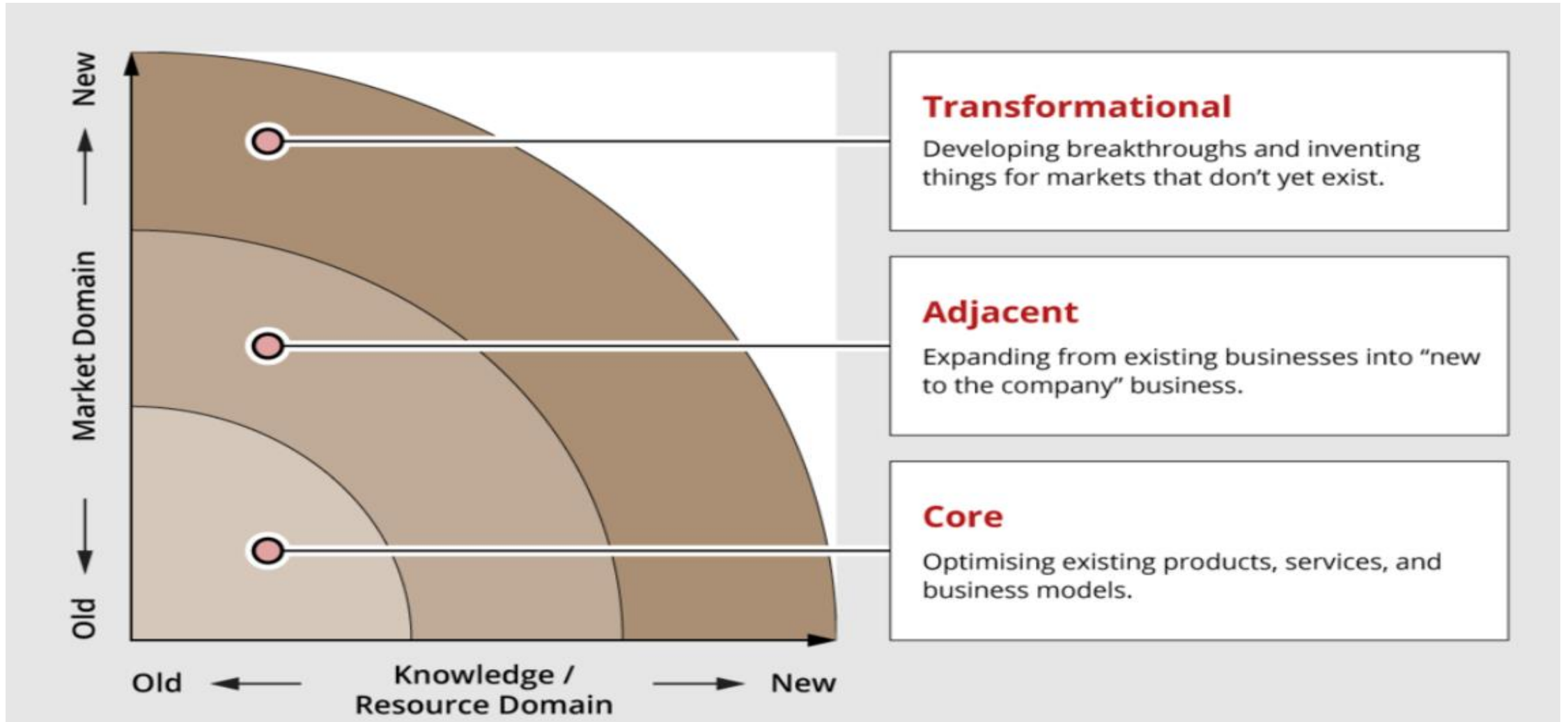
Task
- Planning
- Controlling
- Organizing

LEADING

People
- Communicating
- motivating

Corporate Knowledge

Value Creation

Value extraction

Human Capital

Collective capabilities

Intellectual assets

Codified, tangible rights

Intellectual Property

Intellectual assets receiving legal protection and become intellectual property

Complimentary business assets

complementing the innovation developed by human capital

Commercialization

Conversion from an intangible into a product or service for customer to pay

Edvinsson and Sullivan (1996)

Managing Innovation

Emerging Technologies

The key digital technologies that are to transform businesses

a. **semiconductors** led a foundation of digital revolution, but nanotechnology shall transform the technology with quantum computing and PV manufacturing (Graphene 2D carbon material)

b. **information and communications technology** has improved due to ability to manufacture tiny transistors where cloud computing, cyber-physical systems, 5/6G technologies and the Internet of Things (IoT)

c. **AI and big data processing of data** through machine l and deep learning for easy processing information and effectively provide solution for results in a large database.

d. **robotics and autonomous systems** the collaboration of processed data through the AI into action that required human intervention

Conclusions

- Emerging and Disruptive technology require to be thoroughly understood to adopt modern engineering technology

- The technology if properly managed will enhance economic growth to Malawi and enhance self reliance

- MW2063 has been formulated to allow the participation for improved service and ease to do business

- Engineers support the design policy in the various sectors to provide scanning strategies for the implementation of MW2063

References

- University of Leeds, (2021). *OENG5100M Innovation, Design and Creative Engineering.* Leeds: University of Leeds.

- Mludi, S. (2022). *Reflective Statement: Emerging and Distruptive Technology.* Leeds: University of Leeds.

- NPC. (2020). *Malawi 2063-Transformimg Our Nation.* Lilongwe: National Planning Commission.

- Trott, P. (2017). *Innovation management and new product development.* London: Harlow, Pearson.

- University of Leeds, (2021). *OENG5203M , Emerging and Disruptive Technologies.* Leeds: University of Leeds.

- Christensen, C. M., Raynor M.E., McDonald R. 2015. What Is Disruptive Innovation? [Online].[Accessed 04 May 2020]. Available from: https://hbr.org/2015/12/what-is-disruptive-innovation

- Nagji, B., Tuff, G. 2012. Managing Your Innovation Portfolio. *Harvard Business Review.* [Online].[Accessed 04 May 2020]. Available from: https://leeds.primo.exlibrisgroup.com/permalink/44LEE_INST/1fj430b/cdi_gale_infotracacademiconefile_A288362606

Thank you for Listening