BLOCKCHAIN FOR BUSINESS

BUSINESS TRANSFORMATION

KA2 - Cooperation for Innovation and the Exchange of Good Practice Strategic Partnerships for higher Education 2018, no. 2018-1-LT01-KA203-047044

CONTENT

1. Introduction and Learning Goals;
2. Recap;
3. Quiz;
4. **Multimedia: Fortune 500 firms in 1955 v. 2015;**
5. **Risks to business;**
6. **The key role of IS in business transformation;**
7. **Paradigm shift and technology change;**
8. **Multimedia: opportunities for business transformation enabled by blockchain;**
9. Bibliography;
10. Quiz;
11. Self-reflection questions;
12. Further readings.

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LEARNING GOALS

Explain the concept of business transformation:

1. Recognize the existence of **competition** and the need for business to **continuously renew/improve**.
2. Explain the role of information systems in enabling (different kids) of business transformation during the last 70 years (i.e., since the introduction of business computing).
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RECAP

What are the following concepts:

1. Authentication;
2. Cryptography;
3. Public key;
4. Private key;
5. Integrity and non-repudiation;
6. Consensus mechanism;
7. PoW;
8. PoS;
9. PoA;
10. Smart contract.

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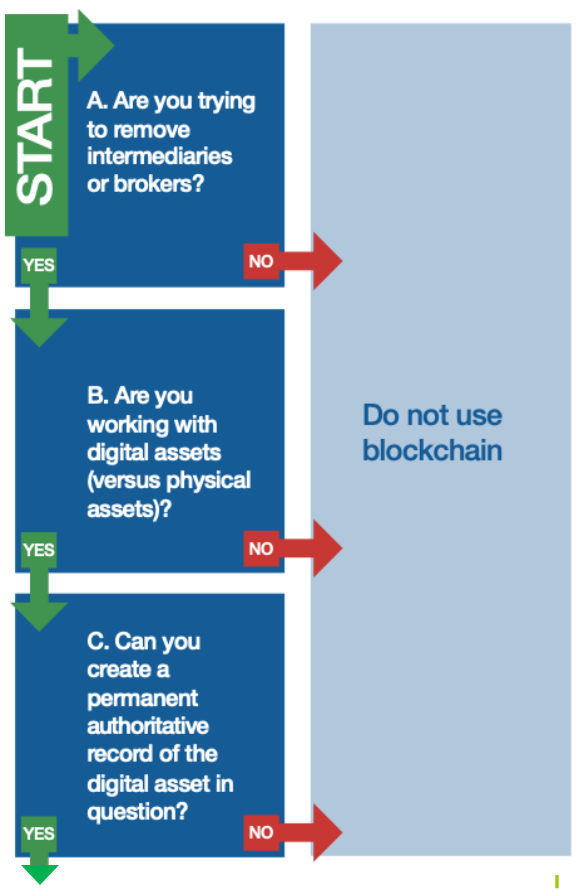
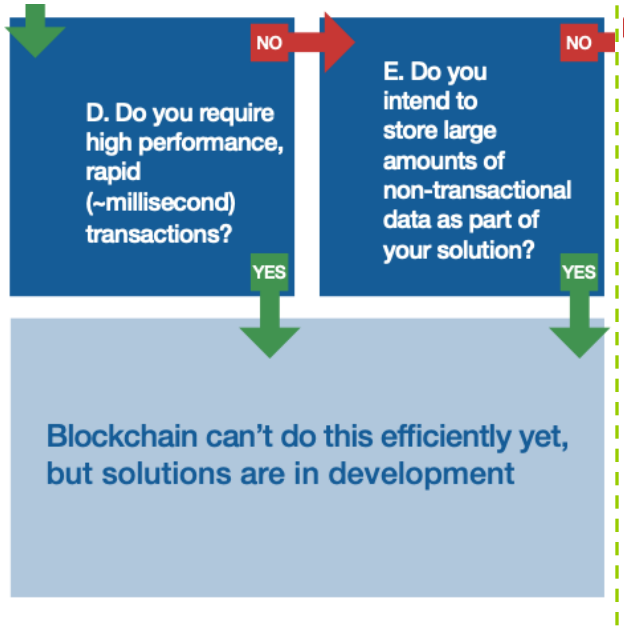
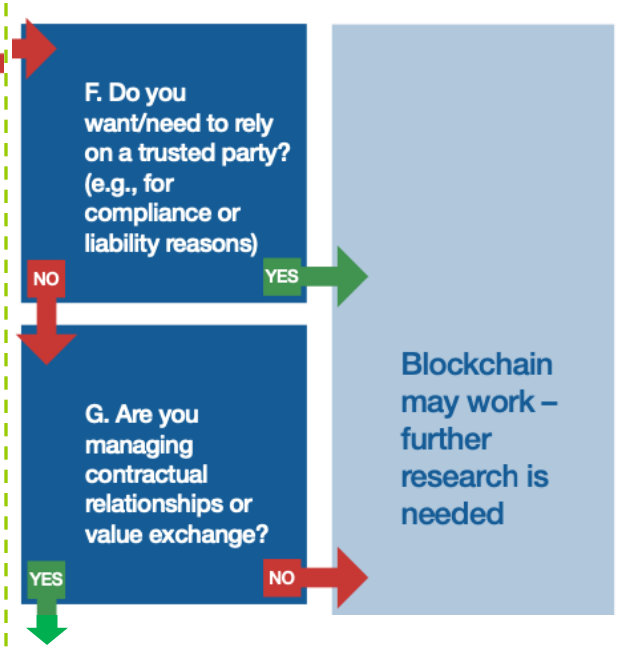
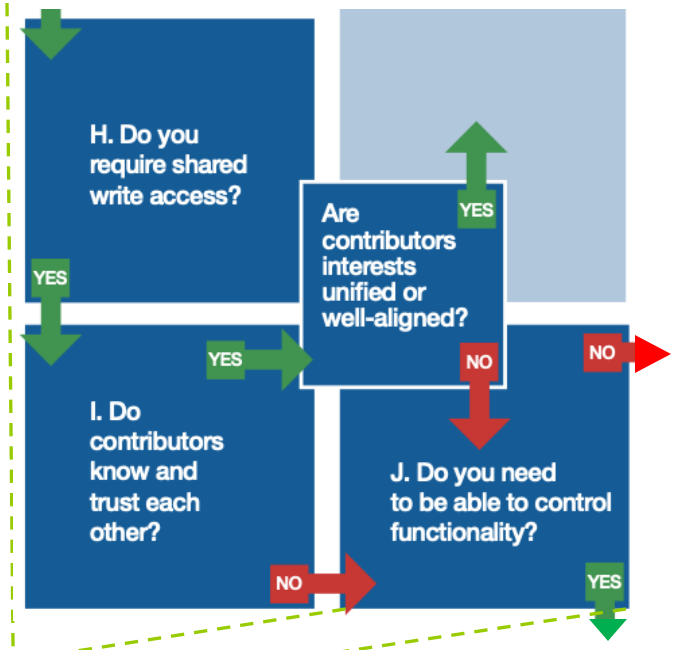
BLOCKNET

http://www3.weforum.org/docs/48423_Whether_Blockchain_WP.pdf



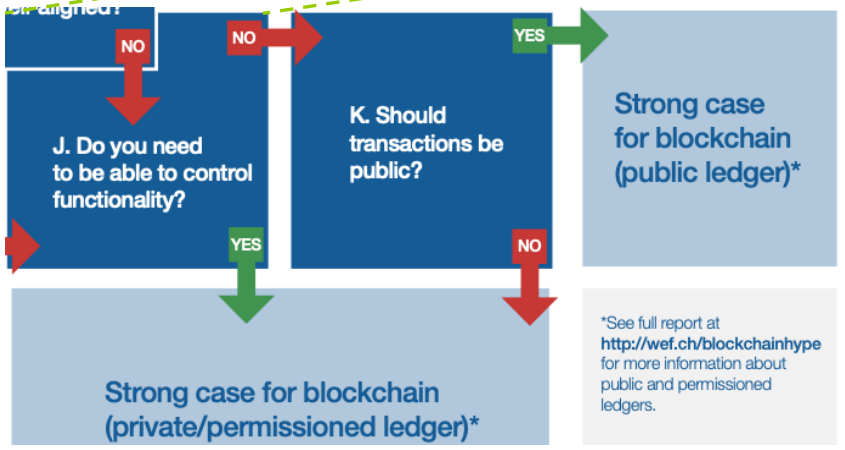






Carefully examine the blockchain adoption tree:

1. How does the knowledge received in this module **change** your understanding steps/decisions involved in this decision tree?
2. Which **specific steps** you can understand better?



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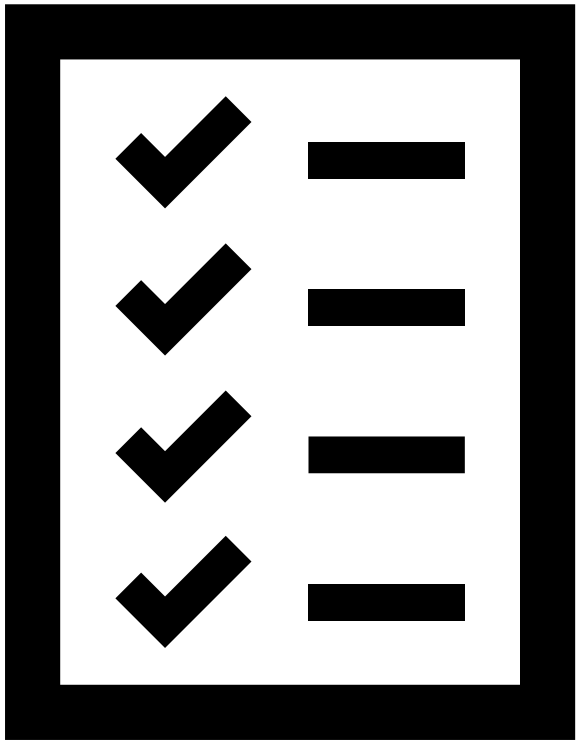
Erasmus+

QUIZ:



- Follow the link to the quiz :
  - Moodle block “Business Transformation".

    → Quiz #1 “The opening quiz”.

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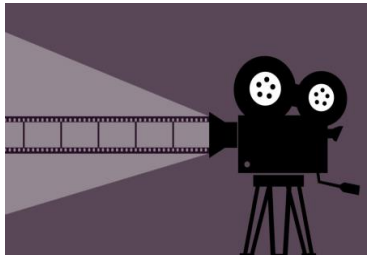
FORTUNE 500 FIRMS IN 1955 V. 2015

Only These 61 Companies Were in the Fortune 500 in Both 1955 and 2015		
3M	CVS	Lockheed Martin
Abbott Laboratories	Deere	Marathon Oil
Alcoa	Dow Chemical	McGraw Hill Financial
Alleghany	DuPont	Monsanto
Archer Daniels Midland	Exxon Mobil	Navistar
Ashland	Freeport-McMoRan	NCR
ATT	General Electric	Northrop Grumman
Avon Products	General Dynamics	Owens Corning
Boeing	General Mills	Owens-Illinois
BorgWarner	General Motors	PepsiCo
Bristol-Myers Squibb	Goodyear Tire and Rubber	Pfizer
Campbell Soup	Hershey	Procter and Gamble
Caterpillar	Honeywell International	Raytheon
CBS	Hormel Foods	Rockwell Automation
Celanese	IBM	Sealed Air
Chevron	International Paper	Textron
Coca-Cola Enterprises	Johnson and Johnson	United States Steel
ConocoPhillips	Kellogg	United Technologies
Crown Holdings	Kimberly-Clark	Weyerhaeuser
Cummins	Kraft Foods Group	Whirlpool
	Lear	

- Nearly 9 of every ten Fortune 500 companies in 1955 are gone, merged, or contracted.
- The list of Fortune 500 companies in 1955 is available here and for 2015 here.

Watch a video: 04:28



https://youtu.be/8WVoJ6JNLO8

Top 10 Most Valuable Companies In The World (1997-2019)

https://www.aei.org/carpe-diem/fortune-500-firms-in-1955-vs-2015-only-12-remain-thanks-to-the-creative-destruction-that-fuels-economic-growth/

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THREE GENERIC RISKS TO BUSINESS

Low demand for products or services	Low demand for the produced products or services results in insufficient revenue to sustain business operation and eventually leads to company's exit from the market
Inefficiency of business operations	Inefficiency in business operations results in inferior as compared to the competitors standing of the company: either higher cost of production, slower production or communication cycles, or lower quality of the product. In any case, inefficiencies in business operation are translated into lower demand for products or services
Lack of innovation	There are only few companies there which can boost the fact that their product hasn't changed in years or decades since it was first brought to the market and enjoy high demand for the product at the same time. Even for those companies, there must have been a substantial innovation in how business processes are organized to follow the changes in the global markets – how company communicates with buyers and suppliers, where and how manufacturing or service development is organized, how hiring practices are organized etc.

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Reflect on those risks using the knowledge of business process organization and its role in sustaining efficiency of a firm

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*THE KEY ROLE OF **IT/IS** IN BUSINESS TRANSFORMATION:*

1. **Automation of tasks** (both computing and managerial decision making)
2. **Decentralization** of decision making (flattening the organizational structure).
3. **Disintermediation** (e.g., booking.com, Yahoo Travel, etc.).
4. **Internet-of-Things** (machine-to-machine business operation).

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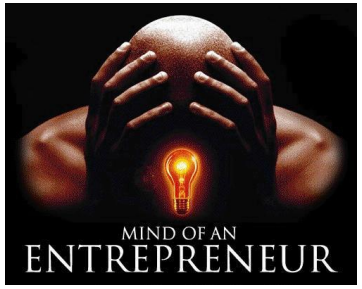
PARADIGM SHIFT AND TECHNOLOGY CHANGE

- **Paradigm shift**, sometimes known as extraordinary science or revolutionary science, is the term first used by Thomas Kuhn in his influential 1962 book “The Structure of Scientific Revolutions” to describe a change in basic assumptions within the ruling theory of science.
- In technology evolution studies, the term **technological regime** was introduced by Richard Nelson
- Regimes are evolving in **cumulative improvements** “proceeding along particular lines of advance that reflect both **what technologists understand they can likely achieve**, and **what entrepreneurs believe customer will buy**” (R. Nelson, 1994)



The new paradigms / regimes emerge and substitute existing ones through **cumulative improvements** within the limits set by the regime, i.e., **the rules for how to produce, use, and regulate specific technologies**.

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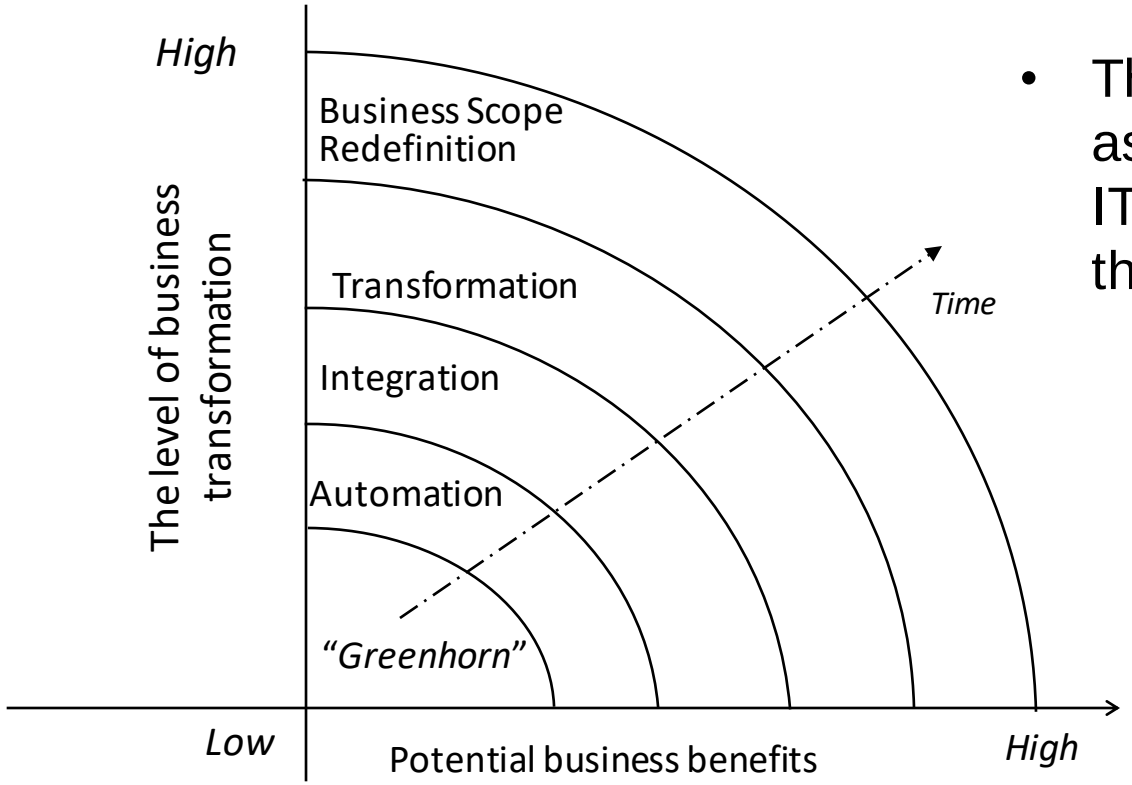
HOW TO "MEASURE" THE DEGREE OF BUSINESS TRANSFORMATION?



- The model offered by Venkatraman is useful in assessing/explaining to what extent a company uses IT to boost efficiency of its business operations and the competitive standing of the firm.

Venkatraman, N. (1994). IT-Induced Business Transformation: From Automation to Business Scope Redefinition. *Sloan Management Review*, *35*(2), 73–87. https://sloanreview.mit.edu/article/itenabled-business-transformation-from-automation-to-business-scope-redefinition/

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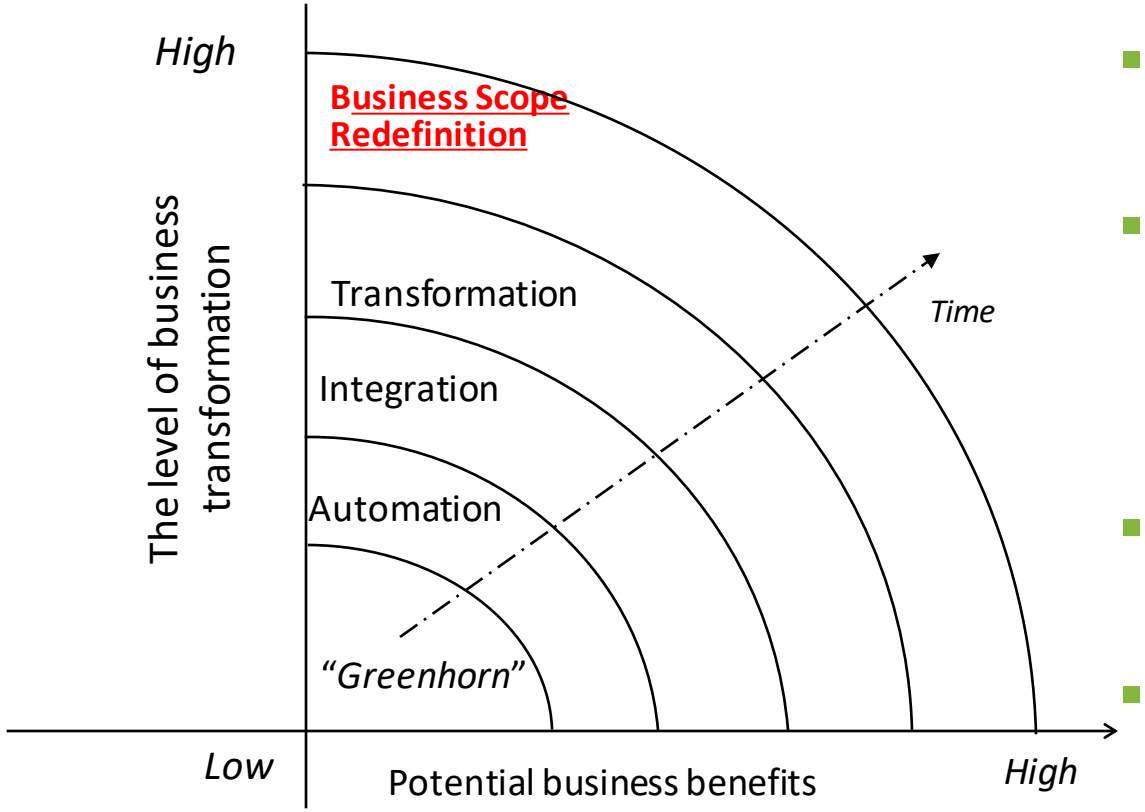
BUSINESS SCOPE REDEFINITION OR PARADIGM SHIFT



- IT is used as a lever for re-configuring the business network and re-defining its scope.
- Emphasis is to use IT to form new ways of doing business and exploit sources of efficiency and effectiveness in the business network.
- Focus on enlarging the business mission and scope.
- Benefits are related to gaining and sustaining strategic and competitive advantages.

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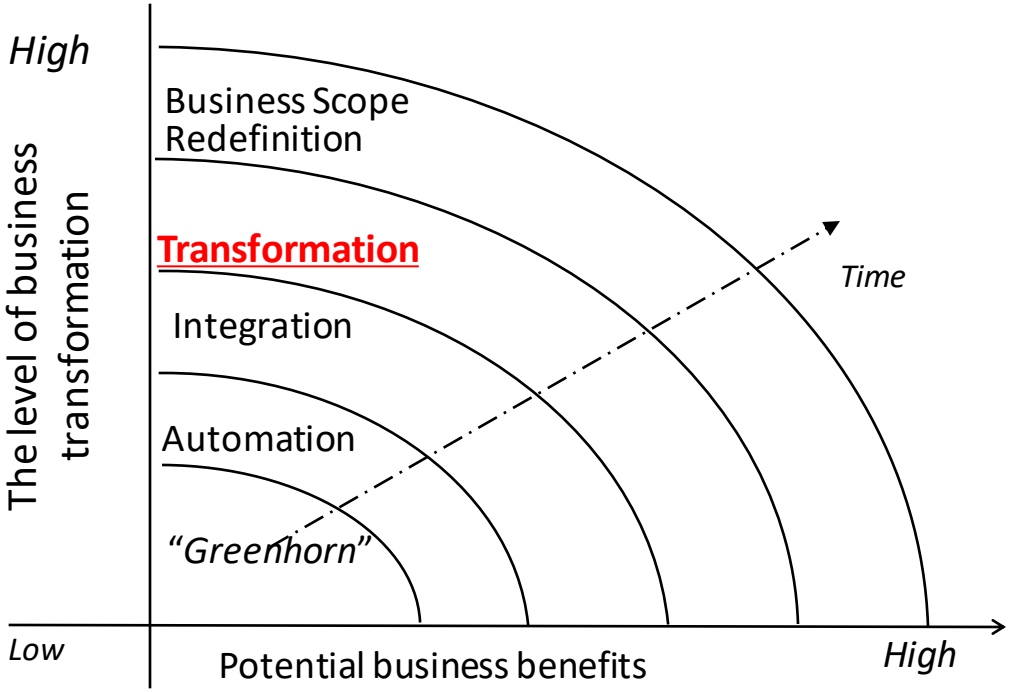
TRANSFORMATION OR BUSINESS PROCESS REENGINEERING (BPR)

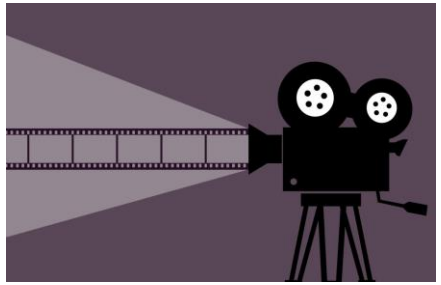


- Business process:
  - It defines how work is to be done (organized, coordinated, and focused) to produce a particular product or service.
  - "A process is thus a specific ordering of work activities, across time and place with a beginning, an end and a clearly identified inputs and outputs" Davenport (1993:5).
  - It is a workflow of material, information and knowledge.
- IT as lever of business process innovation:
  - IT challenges basic assumptions in the existing processes.
  - BPR is f*undamental* rethinking and *radical* redesign of business *process* to achieve *dramatic* improvements in performance.

Watch a video: 02:26

„Meet the robots making Amazon even faster"

https://youtu.be/UtBa9yVZBJM



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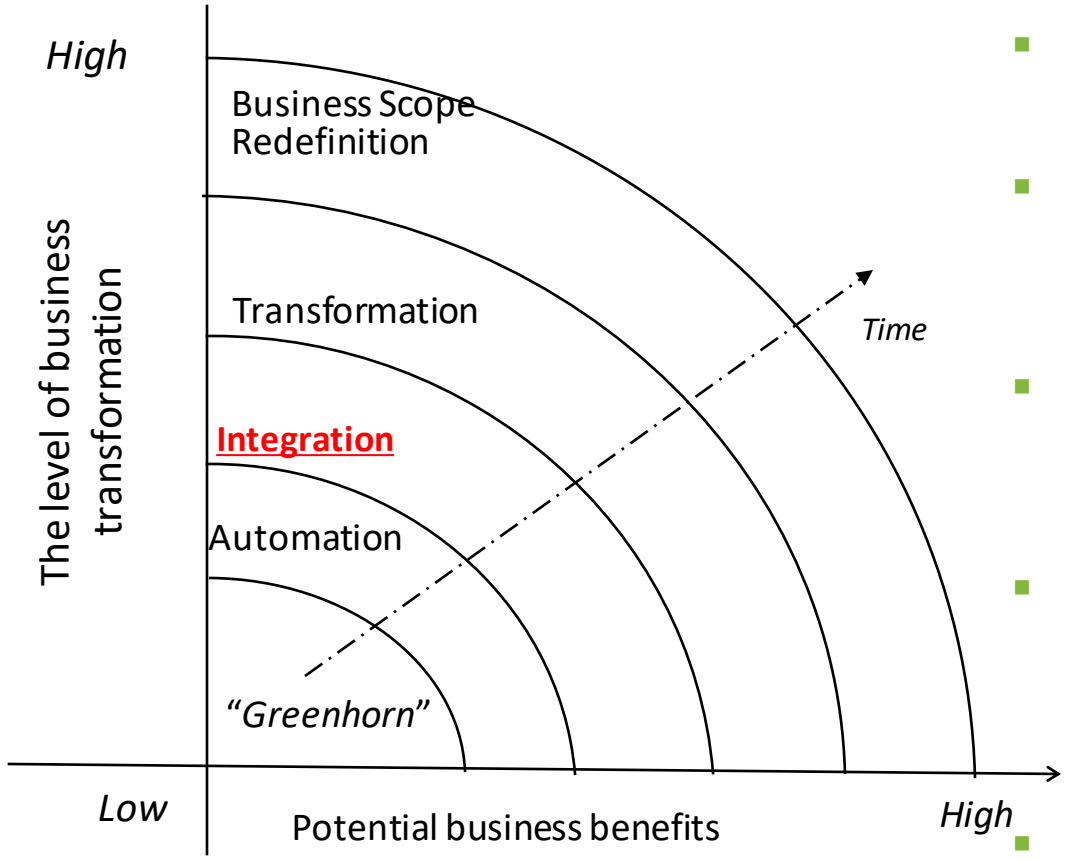
INTEGRATION



- IT is considered as an information technology rather than a production technology.
- Emphasis is to liberate information using the powers of IT and achieve internal integration (technological, organisational).
- Systems are designed with the view of facilitating more flexible, robust, timely and accessible information to support decision making.
- Electronically generated information about markets, products, customers and the power to analyse and communicate these efficiently and effectively provide new kinds of information tools.
- Benefits enhance efficiency and effectiveness.

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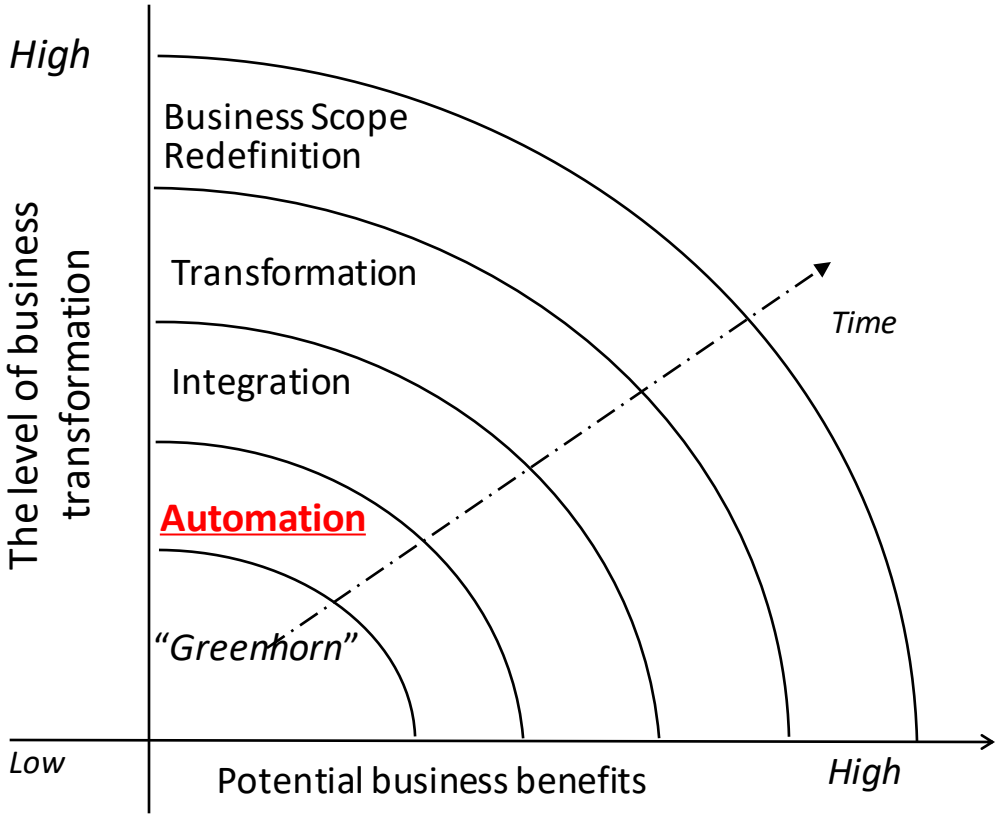
AUTOMATION



- IT is considered as a production rather than an information technology.
- Emphasis is to reduce the cost of business operations and improving the efficiency of existing tasks rather than to challenge, connect or replace them.
- Proliferation of systems, but paper is at the centre of automated activities as the information handling chain is not fully computerized.
- Information is considered as a by-product and little or no effort is made to use it as a valuable resource.
- Benefits are related mainly to efficiency gains.

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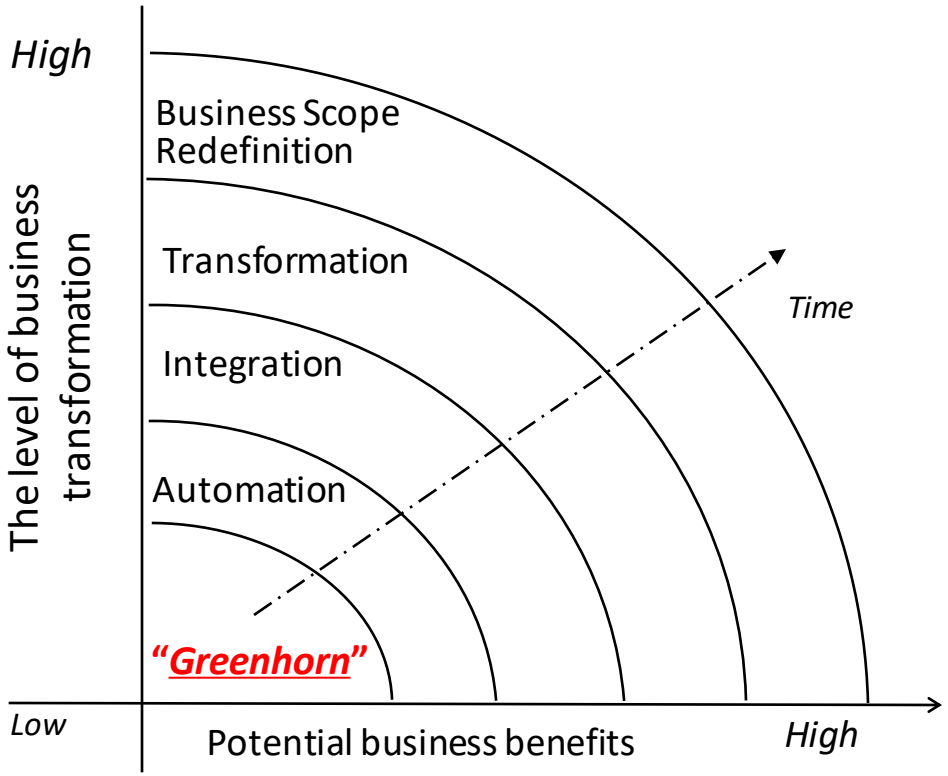
"GREENHORN"



- No clear view or strategy about IT.
- Management is mostly unaware of the power and value of IT.
- There is no internal IT structure or if one exists, it is subordinate to other departments.
- IT is adopted in an uncontrolled and somewhat chaotic fashion to meet individual department needs, e.g. to facilitate secretarial work.

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*The new paradigms / regimes emerge and substitute existing ones through **cumulative improvements** within the limits set by the regime, i.e., **the rules for how to produce, use, and regulate specific technologies**.*

Try to find examples you are familiar with, where business processes in one firm or in the whole industry where gradually or abruptly changing with respect to one or more of those tasks, changing the rules of the game for all other firms, too.

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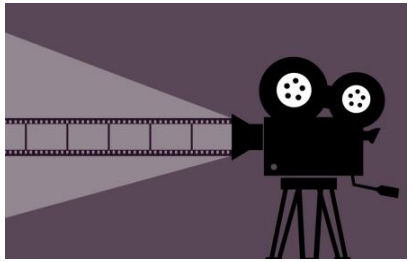
WHAT SPECIFIC OPPORTUNITIES FOR BUSINESS TRANSFORMATION CAN BE ENABLED BY BLOCKCHAIN

Watch the video, answer the questions:

1. Can you see examples of automation, integration, and transformation found in the video?
2. What were the “unexpected” changes to the business due to the application of novel technology?
3. Read the suggested literature (see the last slide), think whether blockchain technology bears the potential for driving automation, integration, and business process transformation?
4. What other transformative potentials can you see in blockchain technology for different fields of business activities?

Watch a video: 12:06



https://www.ted.com/talks/mick_mountz_what_happens_inside_those_massive_warehouses

Mick Mountz.
What happens inside those massive warehouses?

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DISCUSSION QUESTIONS:

Business transformation:

1. What are the internal (within the company) and external (in the marketplace) forces for continuous improvement of company's business operations and/or products and services?
2. What are the three generic risks to company business?
3. How IS/IT can help companies make business operations more efficient?
4. Which specific characteristics of blockchain technology are having potential to transform the business as we know it today?

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BIBLIOGRAPHY:

1. Carr, N. G. (2003). IT Doesn't Matter. Harvard Business Review, 81, 41–49. https://hbr.org/2003/05/it-doesnt-matter

2. Iansiti, M., & Lakhani, K. R. (2017). The truth about blockchain. Harvard Business Review, 95 (January–February), pp.119–127. Access: https://hbr.org/2017/01/the-truth-about-blockchain

3. Nelson, R. R. (1994). The Co-evolution of Technology, Industrial Structure, and Supporting Institutions. Industrial and Corporate Change, 3, pp.47–63. https://doi.org/10.1093/icc/3.1.47

4. Perry, M. J. (n.d.). Fortune 500 firms in 1955 v. 2015; Only 12% remain, thanks to the creative destruction that fuels economic prosperity. AEIdeas. Access: https://www.aei.org/carpe-diem/fortune-500-firms-in-1955-vs-2015-only-12-remain-thanks-to-the-creative-destruction-that-fuels-economic-growth/

5. Venkatraman, N. (1994). IT-Enabled Business Transformation: From Automation to Business Scope Redefinition. Sloan Management Review, 35(2), pp.73–87. Access: https://sloanreview.mit.edu/article/itenabled-business-transformation-from-automation-to-business-scope-redefinition/

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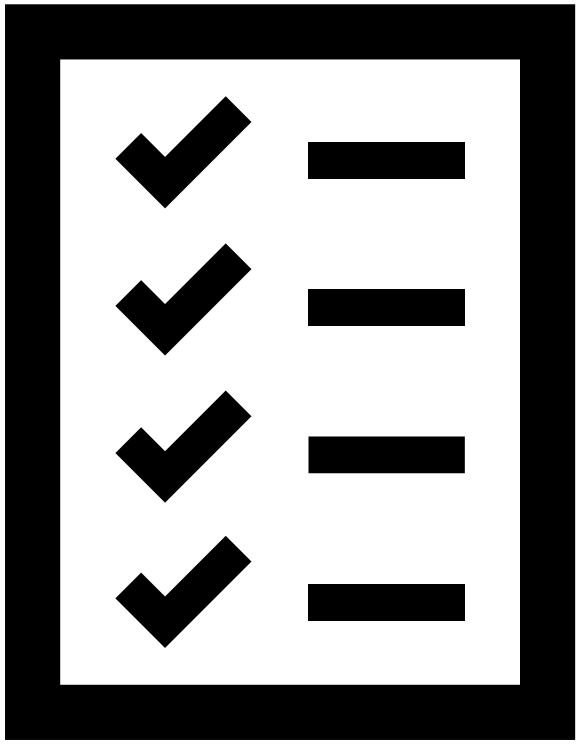
QUIZ:



- Follow the link to the quiz :
  - Moodle block “Business Transformation".

    → Quiz #2 “The closing quiz”.

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SELF-REFLECTION QUESTIONS:

1. What is the relationship between the development of the global marketplace, the demand for company products and services, the need for continuous business optimization, and the novel application of IT?

2. How many examples of paradigmatic changes in business operations or product features do you know? How often we see paradigmatic changes in products or markets?

3. Reflecting on the video on the 20-year perspective on changes in the list of top companies by market capitalization, can you see the role of IT as a product and/or as business tool in today's market competition? Are you aware of blockchain technologies application or blockchain product development by any of the featured companies? It may be a good idea to search on the web for examples...

Top 10 Most Valuable Companies In The World (1997-2019) (04:20) https://youtu.be/8WVoJ6JNLO8

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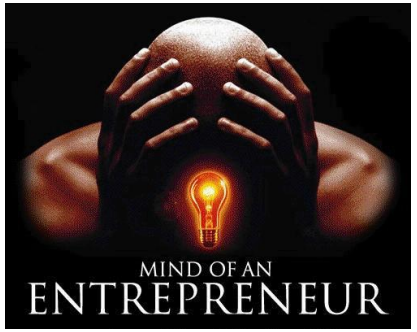
COMPLEMENTARY ASSIGNMENT

CBSInsights.com: "58 BIG INDUSTRIES BEING TRANSFORMED BY BLOCKCHAIN"

(https://www.cbinsights.com/research/industries-disrupted-blockchain/)



- Read the article
- Analyse the business processes transformation
- Pick business opportunities in 5 chosen industries
- Think of possible (mobile) application for one of your chosen fields
- Try to forecast the potential for your app and its role in transforming the future global society

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FURTHER READINGS:

1. Carr, N. G. (2003). IT Doesn't Matter. *Harvard Business Review*, *81*, 41–49. https://hbr.org/2003/05/it-doesnt-matter

2. Iansiti, M., & Lakhani, K. R. (2017). The truth about blockchain. *Harvard Business Review*, *95* (January–February), pp.119–127. Access: https://hbr.org/2017/01/the-truth-about-blockchain

3. i-SCOOP „Digital transformation: online guide to digital business transformation". Access: https://www.i-scoop.eu/digital-transformation/

4. i-SCOOP „Digital transformation strategy: the bridges to build". Access: https://www.i-scoop.eu/digital-transformation/digital-transformation-strategy/

5. Venkatraman, N. (1994). IT-Enabled Business Transformation: From Automation to Business Scope Redefinition. *Sloan Management Review*, *35*(2), pp.73–87. Access: https://sloanreview.mit.edu/article/itenabled-business-transformation-from-automation-to-business-scope-redefinition/

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VIDEO MATERIALS

1. Top 10 Most Valuable Companies In The World (1997-2019) (04:20) https://youtu.be/8WVoJ6JNLO8

2. Meet the robots making Amazon even faster (2:26) https://youtu.be/UtBa9yVZBJM

3. *Mick Mountz* What happens inside those massive warehouses? (12:06) https://www.ted.com/talks/mick_mountz_what_happens_inside_those_massive_warehouses

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