

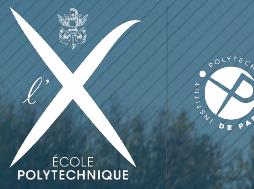


Strategic Management

Master IREN

2023

Camille Toussaint



INSTITUT
POLYTECHNIQUE
DE PARIS

Session 5

Innovation and disruption

Agenda

1. Introduction
2. Innovation dilemmas
3. Understanding Disruption

Break

Group Work!

Learning objectives of the session

After this session, you will be able to:

- Define innovation
- Understand the main innovation dilemmas
- Understand and apply the disruptive model of Christensen

1 Introduction

Historical perspective on innovation

1. Innovation as a **controversial notion** (Antiquity - 17th century)

- **Antiquity:** Negative perception of innovation, forbidden by law
- **14th century:** *Innovare*: change the established order
- **17th century:** Associated with revolutions. The innovator is a deviant and a threat.

2. Innovation as a **positive category** (19 th century)

- Series of political, industrial, scientific and social revolutions, which connote the term revolution positively.
- Innovation becomes a positive term, associated with economic progress

3. Innovation as a **theoretical concept** (20th century)

- Technological innovation = economic progress, recovery, productivity gains and competitiveness
Innovation becomes a national policy issue and a source of economic growth for nations

Schumpeter and the creative destruction



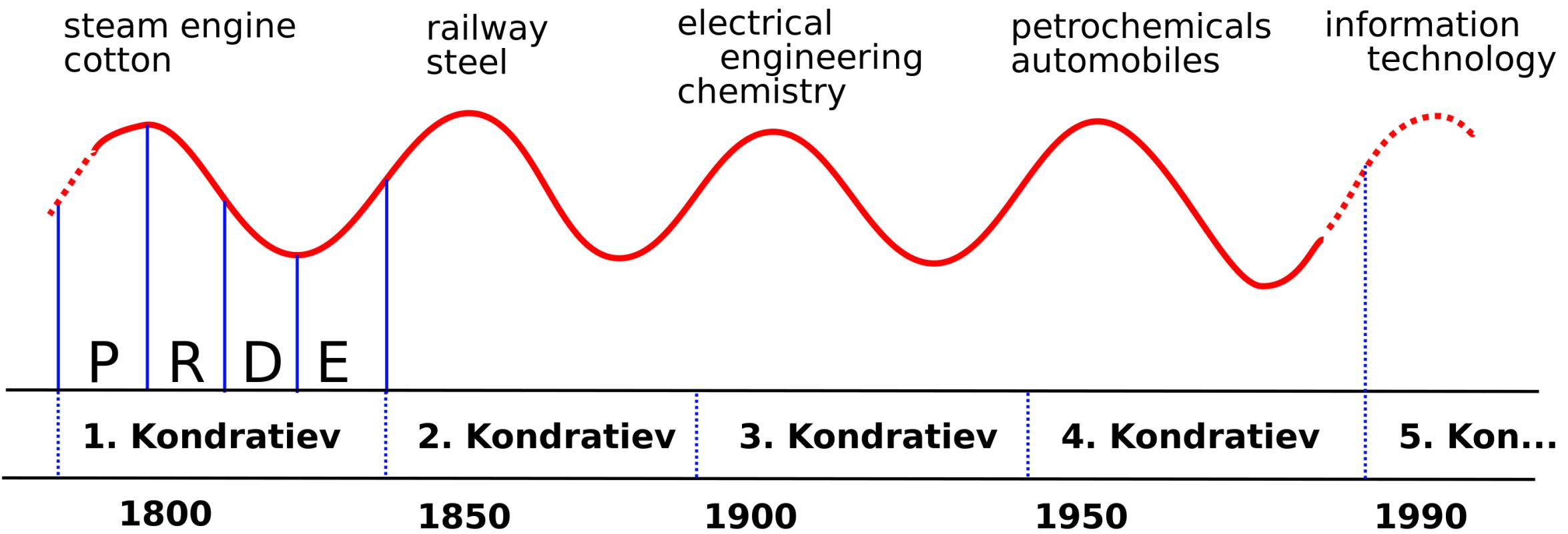
- Innovation as 'new combinations': "To produce something else or otherwise is to combine these forces and things differently."
- Central figure of the entrepreneur (initiative, authority, vision)
- Innovation in clusters
- One radical innovation / followed by incremental innovations

Innovation is a source of growth AND a factor of crisis

=

creative destruction

Schumpeter, 1912

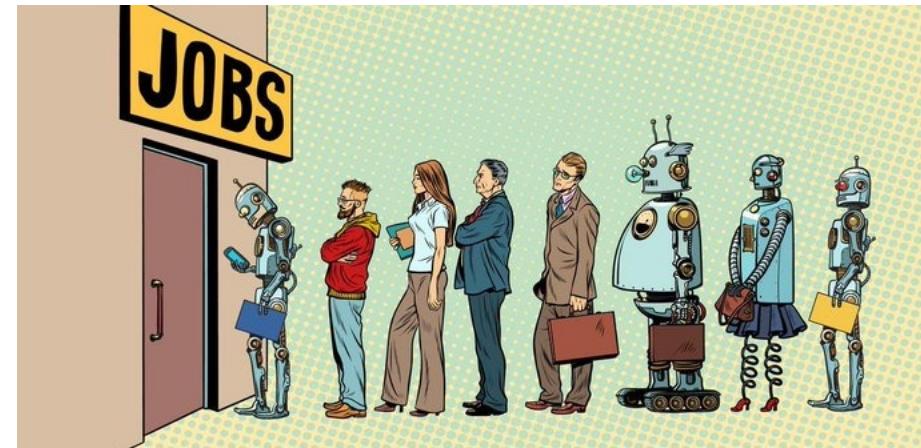
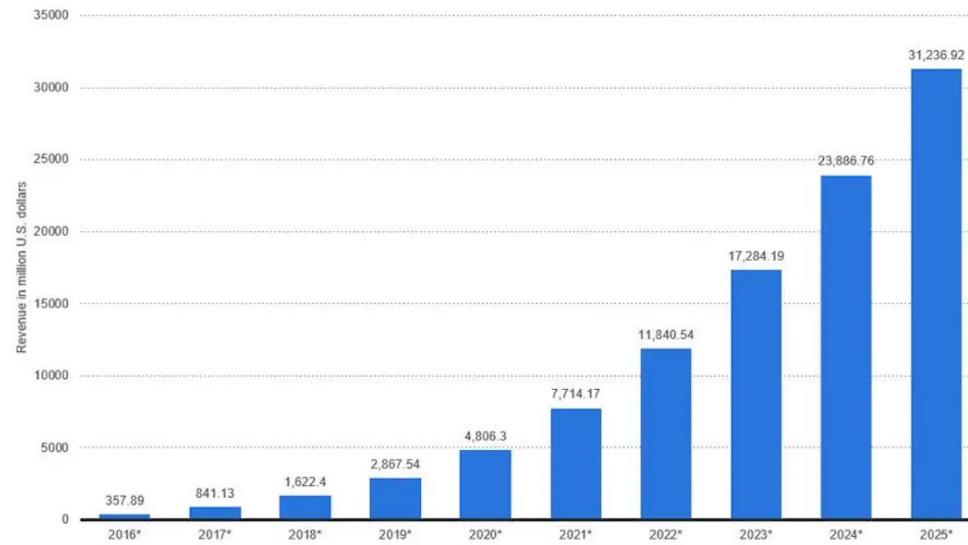


P: prosperity
R: recession
D: depression
E: improvement

Applied to AI?

Enterprise artificial intelligence market revenue worldwide 2016-2025

Revenues from the artificial intelligence for enterprise applications market worldwide, from 2016 to 2025 (in million U.S. dollars)



L'innovation aujourd'hui

- A new innovation culture
- An attractive concept
- A new language
- Innovation replacing the concept of progress?



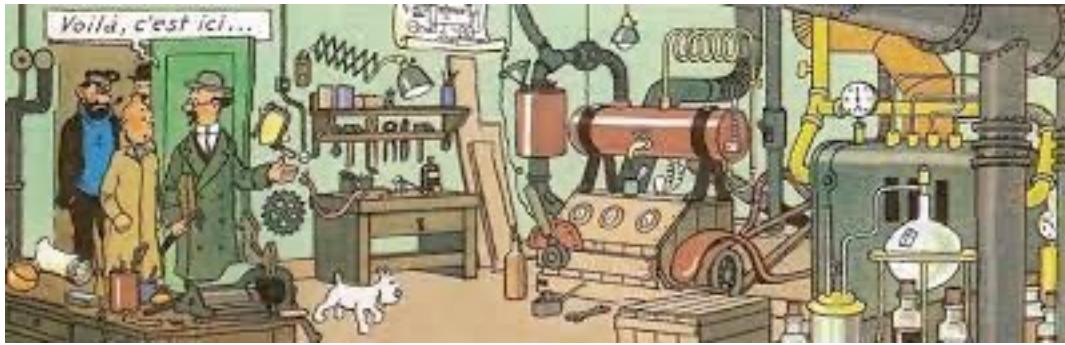
ÉTIENNE KLEIN
Sauvons le Progrès

dialogue avec
Denis Lafay

acteurs
DE L'ÉCONOMIE ■ l'aube

The nature of innovation

Invention



Science



Entrepreneurs

Technology

A close-up photograph of a computer screen displaying a large amount of complex code or programming language.

Progress

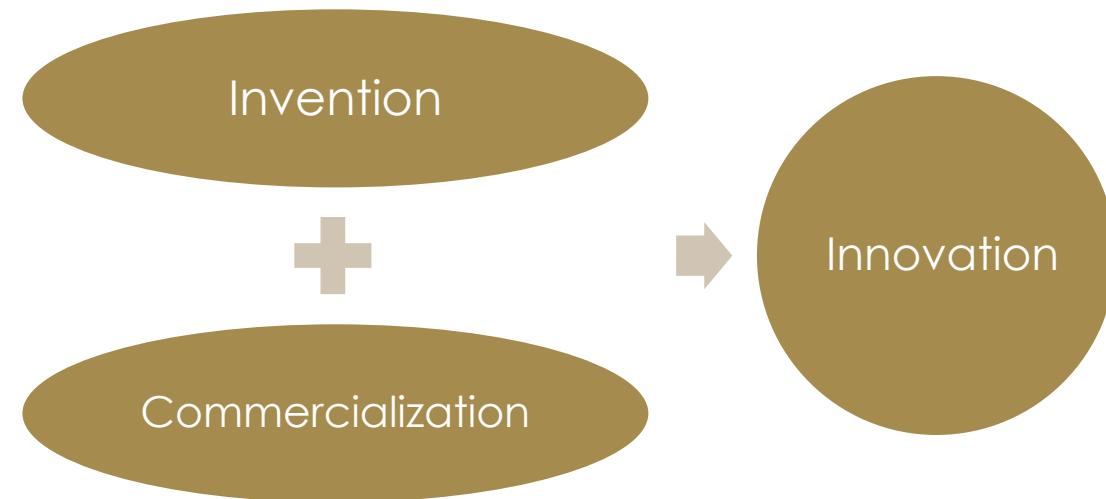


Definition

Innovations is a value or an idea used to create value.

Innovation is “a new way of doing things that is commercialized” (Michael Porter, 1990)

“The conversion of new knowledge into a new product, process or service and the putting of this new product, process or service into actual use” (P. Trott, 2005)



Innovation?



Typology 1

Product innovation

- New goods are services

Process innovation

- A new method

Organizational innovation

- New work organisation

Business model innovation

- New business model

+ Environmental and social innovations

Typology 2

LEVERAGES EXISTING BUSINESS MODEL	REQUIRES NEW BUSINESS MODEL
Disruptive Open-source software Software companies Video on demand DVD rental services Ride-sharing services Taxi and limo companies	Architectural Personalized medicine Pharmaceutical companies Digital imaging Polaroid and Kodak Internet search Newspapers
Routine A next-generation 3 Series BMW A new index fund Vanguard A new 3D-animated film Pixar	Radical Biotechnology Pharmaceutical companies Jet engines Aircraft manufacturers Fiber-optic cable Telecommunications companies

LEVERAGES EXISTING TECHNICAL COMPETENCES REQUIRES NEW TECHNICAL COMPETENCES

Pisano, 2015

Innovation dilemmas

Techno push vs Market pull



Techno push

There is a R&D development which drives new product development



Is there a market? A demand?
What is the BM?
Is my technology easy to imitate?
Are there substitutes?



Market pull

There is a need of a product coming from customer / market research
Lead users



Did we interpret the market signals properly?
Who are my lead users? What are their real needs?

Product innovation vs process innovation

Product innovation

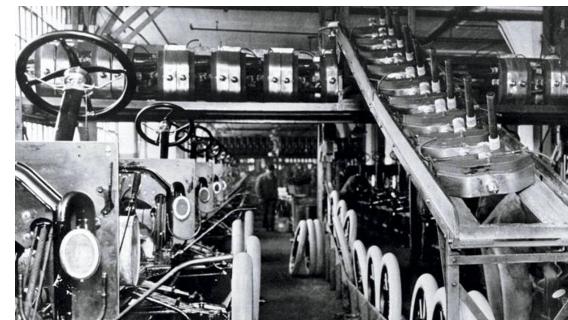
OR

Process innovation

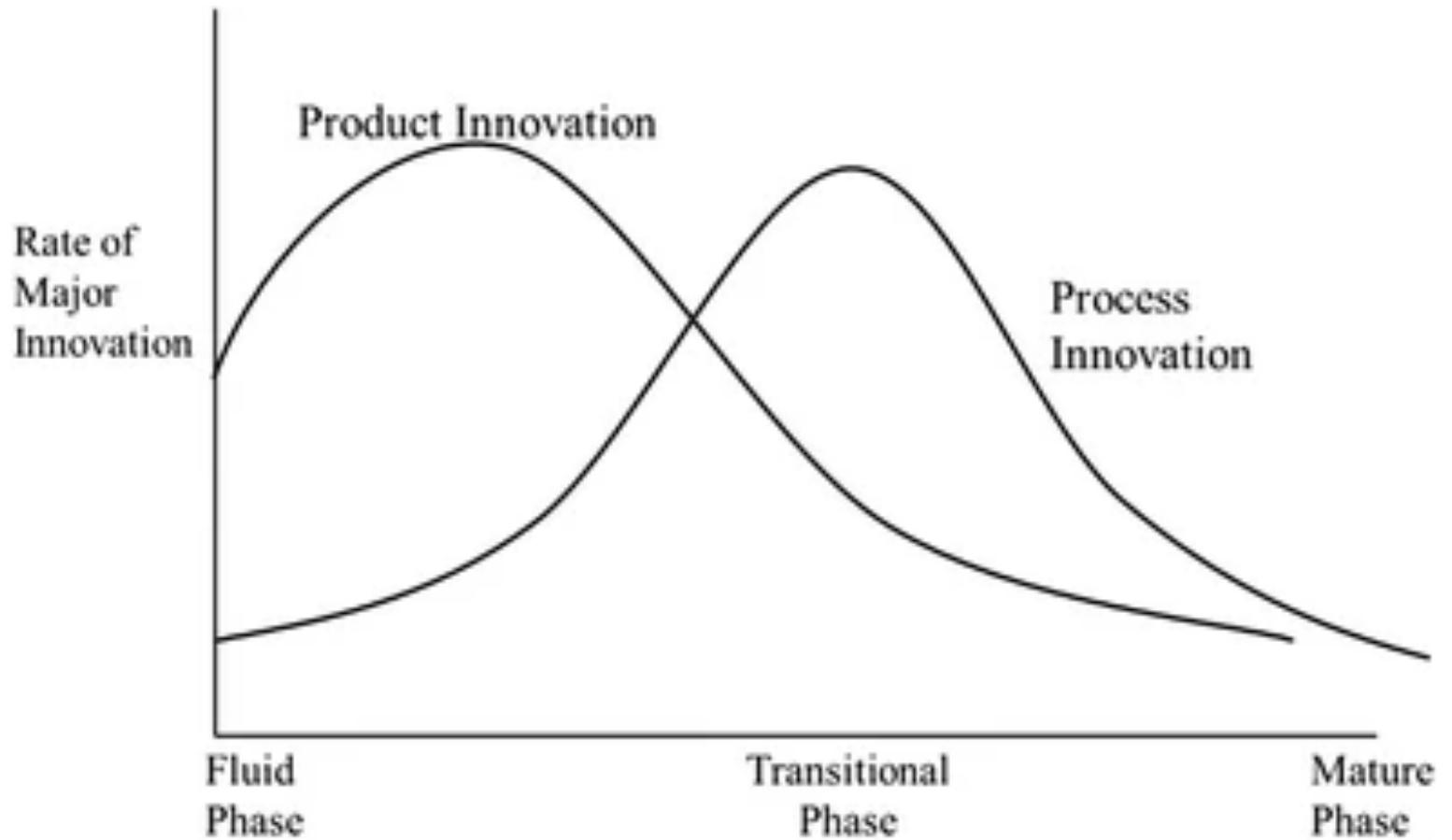
- Emergence of a dominant design => process innovation



Model T – Ford 1908



Assembly line 1913



Utterback, 1994

Exploration vs Exploitation

Two innovation strategies



Exploration

Seek out for new profit opportunities
Long-term
High uncertainty
Experimentation

Exploitation

Take advantage of a captive profit zone
Short-term
Low uncertainty

March, 1992

An organization dilemma

What kind of innovation does this lead to?



Radical, disruptive

Incremental

March, 1992

An organization dilemma

What are firms more likely to do?



Small structure
Flexibility
High tolerance to risk

Big structures
Strong resources
Low tolerance to risk

Ambidexterity

March, 1992

Types of ambidexterity

- **Structural ambidexterity**

Strict separation of exploration and production activities into two distinct organizational units.

- **Contextual ambidexterity**

Combination of exploration and exploitation projects within a single entity.

- **Network ambidexterity**

Distribution of exploration and exploitation activities between the various member organizations of a network, each specializing in a particular area.







VIRAL TRENDS

Apple users bash new iPhone 15: ‘Innovation died with Steve Jobs’

By Brooke Kato

Published Sep. 13, 2023, 10:28 a.m. ET

Apple chief Tim Cook is under pressure to prove innovative flair is still there

Becoming the world's biggest company was a milestone for the iPhone maker, but can it stay on top?



Apple Hasn't Been Innovative For A Decade. What Are They Missing?

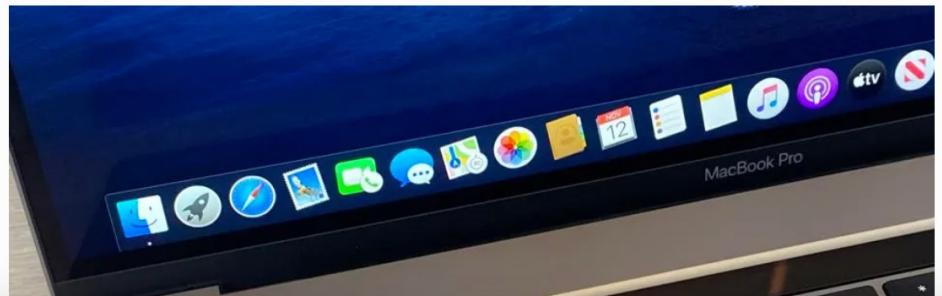
Chuck Swoboda Contributor

I write about the intersection of leadership and innovation.

Follow

Jan 13, 2020, 09:35am EST

This article is more than 3 years old.

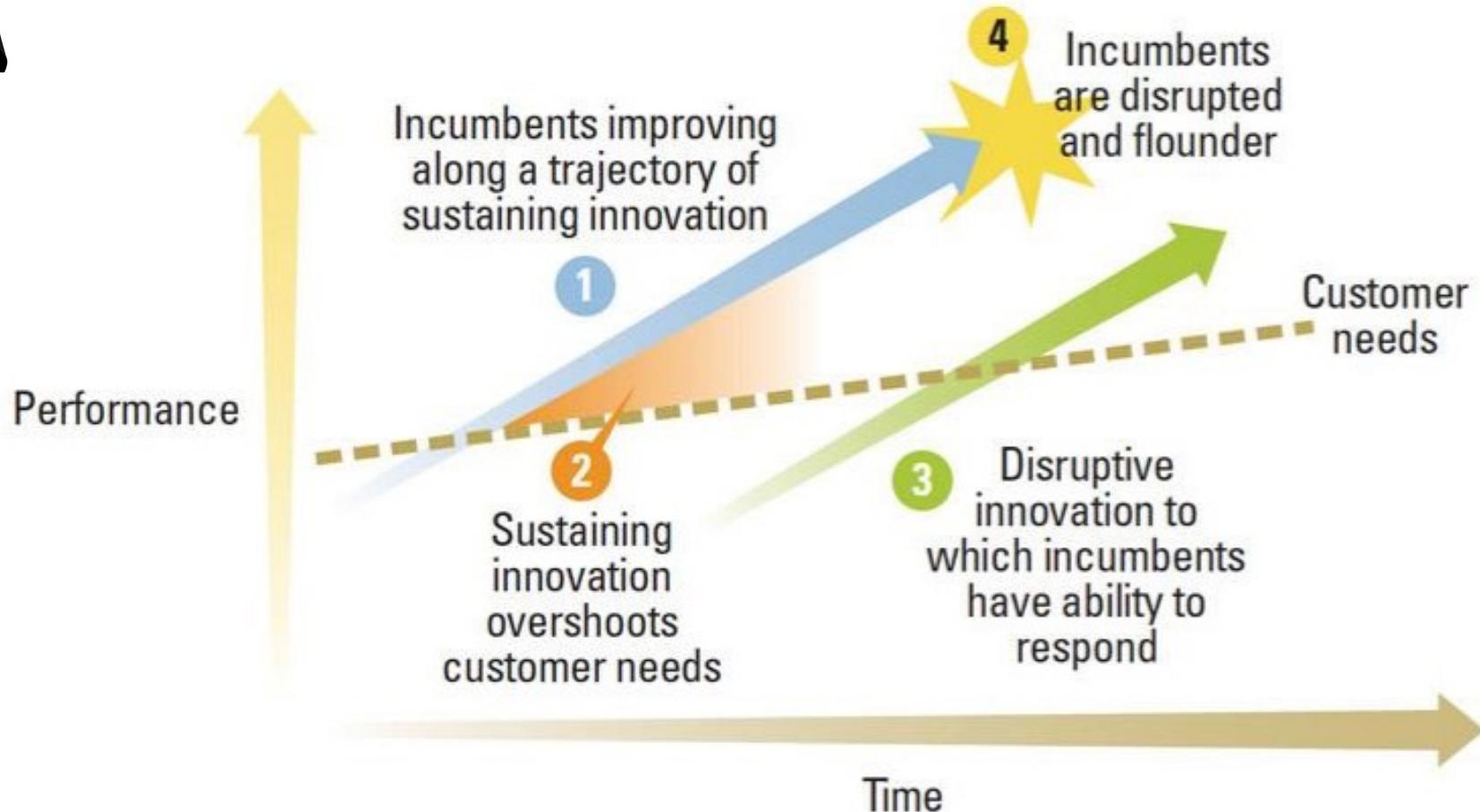




Disruptive
innovations



Christensen's model



Disruption – an innovation concept



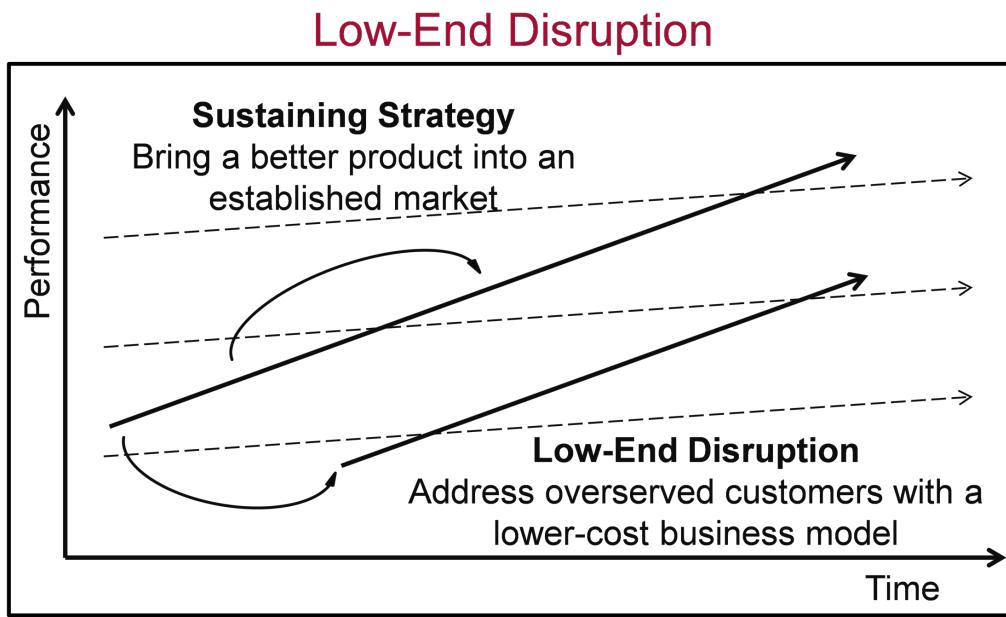
“describes a process whereby a smaller company with fewer resources is able to successfully challenge established incumbent businesses” (Christensen et al., 2015).

Disruption criterias:

- 1.A disruptive innovation is initially less efficient than existing technologies.
- 2.It makes it possible to produce mediocre products at a cost substantially lower than the previous offers.
- 3.It gradually improves, as a result of continuous improvements.

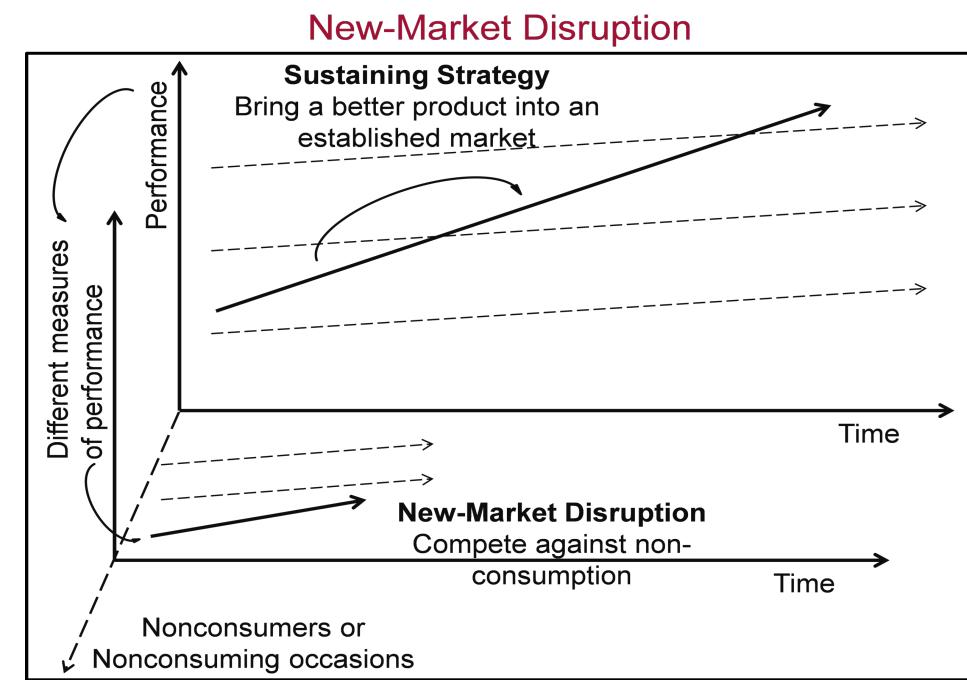
Low-end vs New market disruption

Low end disruption



© Clayton M. Christensen, *The Innovator's Solution*

New-market disruption



© Clayton M. Christensen, *The Innovator's Solution*

Exercise

Discuss the disruptiveness of Nintendo



Key points

- Innovation has not always had a positive connotation
- Any organization is confronted to several innovation dilemmas: market pull / techno push ; process vs product ; exploration vs exploitation
- Disruption describes a innovation pattern especially widespread in digital industry

Group work

Topics

- AI startup in the music industry (AIVA)
- Digital identity
- Autonomous vehicle
- Augmented reality headset (Apple Vision Pro)
- Smart buildings construction
- B2B Chatbots / Chatbots implementation
- DNA data storage in plants (green biotech company)

Group work instructions

Two sessions left before the presentation:

- 10/15 pages document (50%)
- Oral presentation (40%)



What you should not forget to address:

- Comprehensive description of the innovation/techno
- Justification of your choice (why this one, why is it interesting)
- Analysis of the external environment / context (for example with PESTEL, PORTER)
- Presentation of the key success factors of the company (for example with SWOT)
- What would be your recommendations? ← Be critical!

ANALYSIS!