

Telemedicine

2 Feb 2017

Class 14

Disruptive Technologies

- An innovation that creates a new market and value network and eventually **disrupts an existing market** and value network, **displacing established market** leading firms, products and alliances.
- Start out small with much faster growth rate

What is a disruptive technology?

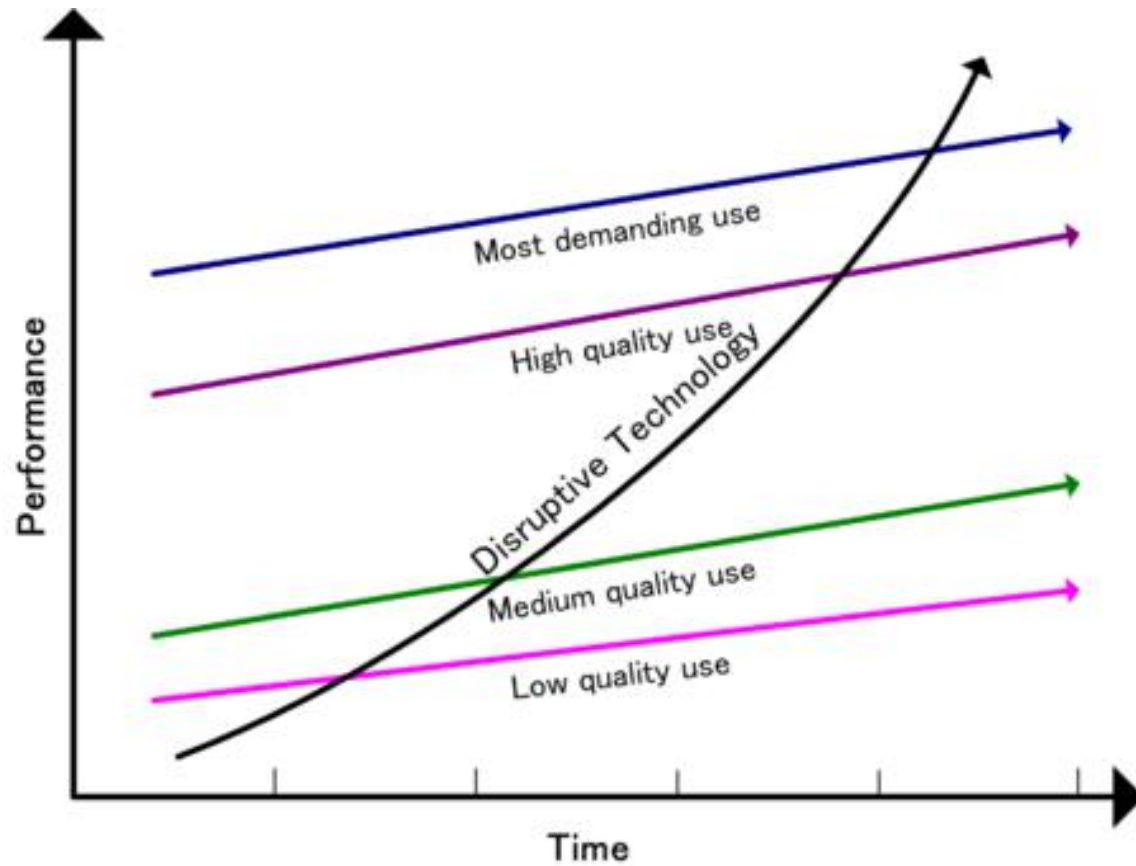
Originally defined by Professor Clayton M. Christensen:

“A new technology that unexpectedly displaces an established technology”

A disruptive technology is a new product, service or technology brought into market which is so superior to the current technologies in that market that it deems them obsolete.

Factors:

- Price
- Size
- Practicality
- Technology
- Cost of Production
- Usability



Examples of disruptive technology in e-business – The Internet

- Letters – Emails – Instant Chat
- Records – Tapes – CDs – Downloadable Music
- Globe – Google Map
- Research books – search engines
- Dial up internet – Wireless Internet

Examples of disruptive technology in e-business – Word Processing



Christopher Latham Sholes invented first manual type Writer in 1867.

Thomas Edison introduced first electronic typewriter in 1920s.



1964 IBM introduced the first Word Processor Machine (Record/save/edit data)

Over 60 WP systems (Microsoft Word 2007)

Examples of disruptive technologies outside of e-business



Horse and Carriage



Car – early 1800s



Tape Walkman

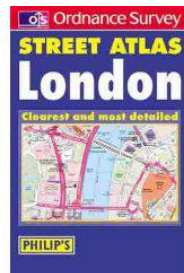


MP3 Player

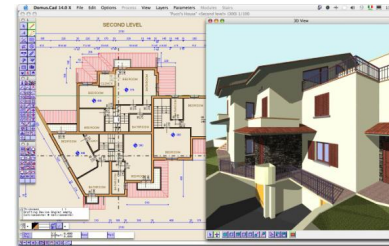
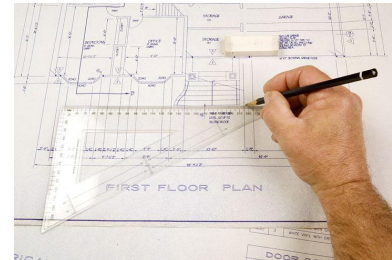
Disruptive Technologies – The generation gap

How many of your parents are as up to date with technology as you are?

Example 1: Atlas – Sat Nav



Example 2: Hand design - CAD



34 Most Disruptive Technologies

Based in Gartner

- Blockchain
- Smart Dust
- 4-D Printing

General-Purpose Machine Intelligence

- 802.11ax
- Context Brokering
- Neuromorphic Hardware
- Data Broker PaaS (dbrPaaS)
- Quantum Computing
- Human Augmentation
 - Personal Analytics
 - Smart Workspace
 - Volumetric Displays
- Conversational User Interfaces
 - Brain-Computer Interface
- Virtual Personal Assistants
 - Smart Data Discovery

- Affective Computing
- Commercial UAVs (Drones)
- IoT Platforms - devices
- Gesture Control Devices
- Micro Data Centers
- Smart Robots
- Connected Home
- Cognitive Expert Advisors
- Machine Learning
- Software-Defined Security
- Autonomous Vehicles
- Nanotube Electronics
- Software-Defined Anything (SDx)
- Natural-Language Question Answering
- Enterprise Taxonomy and Ontology Management
- Augmented Reality
- Virtual Reality

What is the solution?

Positive Implications

- Save Physical space (USB Stick).
- Beneficial effect on environment (Letters, books, carbon footprint).
- Improving choice.
- Improving technology (Easier life).
- Easier Communication.
- Access to more information.
- Independence.

Negative Implications

- Dependence on technology (Less skilled).
- Pollution (Transport, production).
- Disadvantage to older generations.
- Negative effects on traditional companies.
- Negative effects on supplementary goods.
- Social implications:
 - Less face to face contact.
 - More lazy (Obesity).
 - Security risks.
 - Crime (Piracy/theft)

- Most disruptive technologies of future: Google
 - on mobiles in class
- Affective Computing
- IEEE 802.11ax standards
- **What are the Disruptive Technologies in Healthcare ?**