

#11. Disruptions, AI



University of Bergamo
Master Course in Project and
Management of Tourism Systems
Academic Year 2021-2022
IT for Tourism Services



What are we talking about this time?



1. Disruptive technologies
2. Pinballs, paper journalism
3. Disruptors in tourism
4. Someone else's components
5. Artificial intelligence
6. Robots
7. What about humans?



The
New York
Times



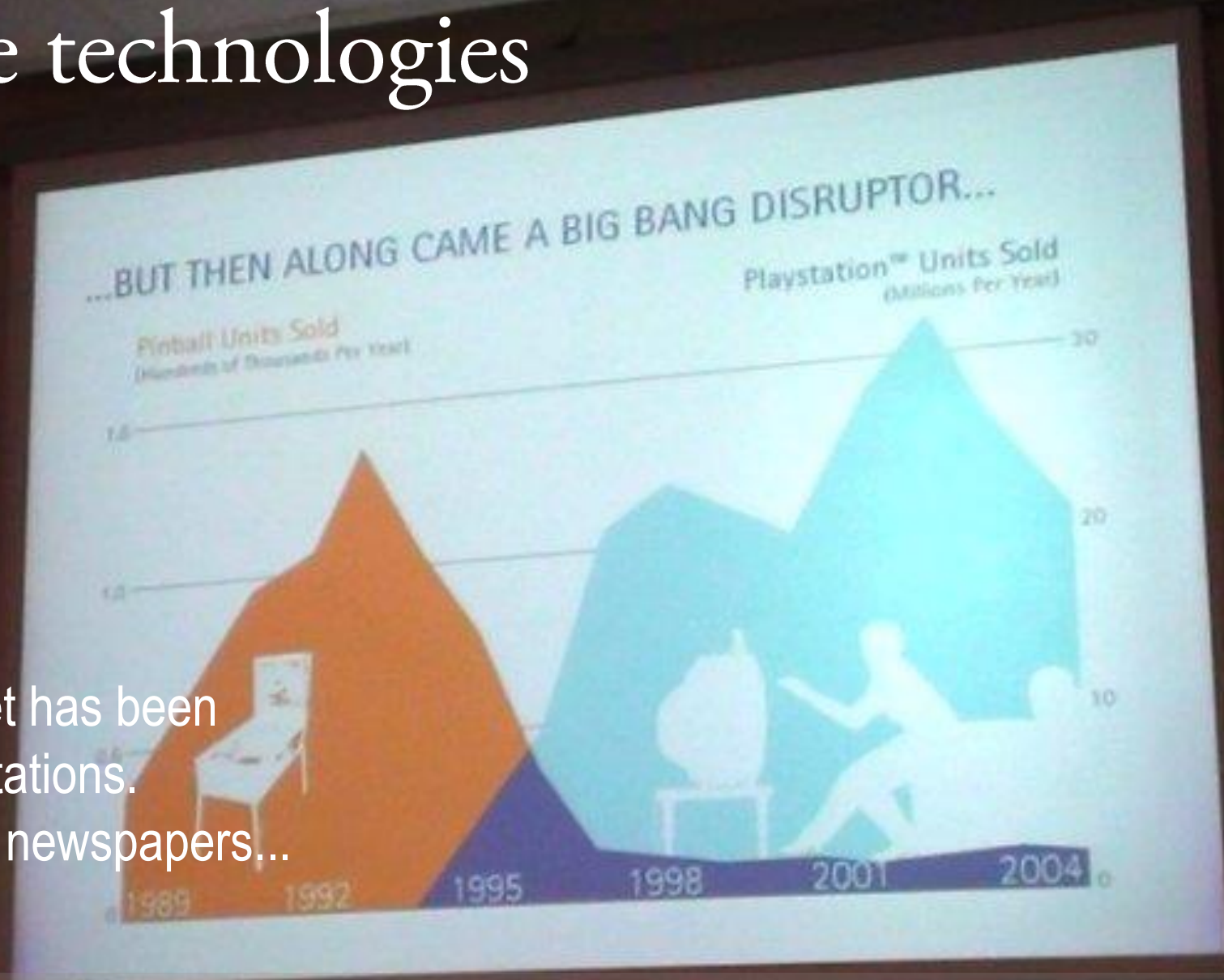
image credits to Plant Services , Genetic Literacy Project and ucop.edu

A conference at the Politecnico di Milano



Pictures taken by your lecturer of a presentation held by Paul Nunes on September 30, 2014

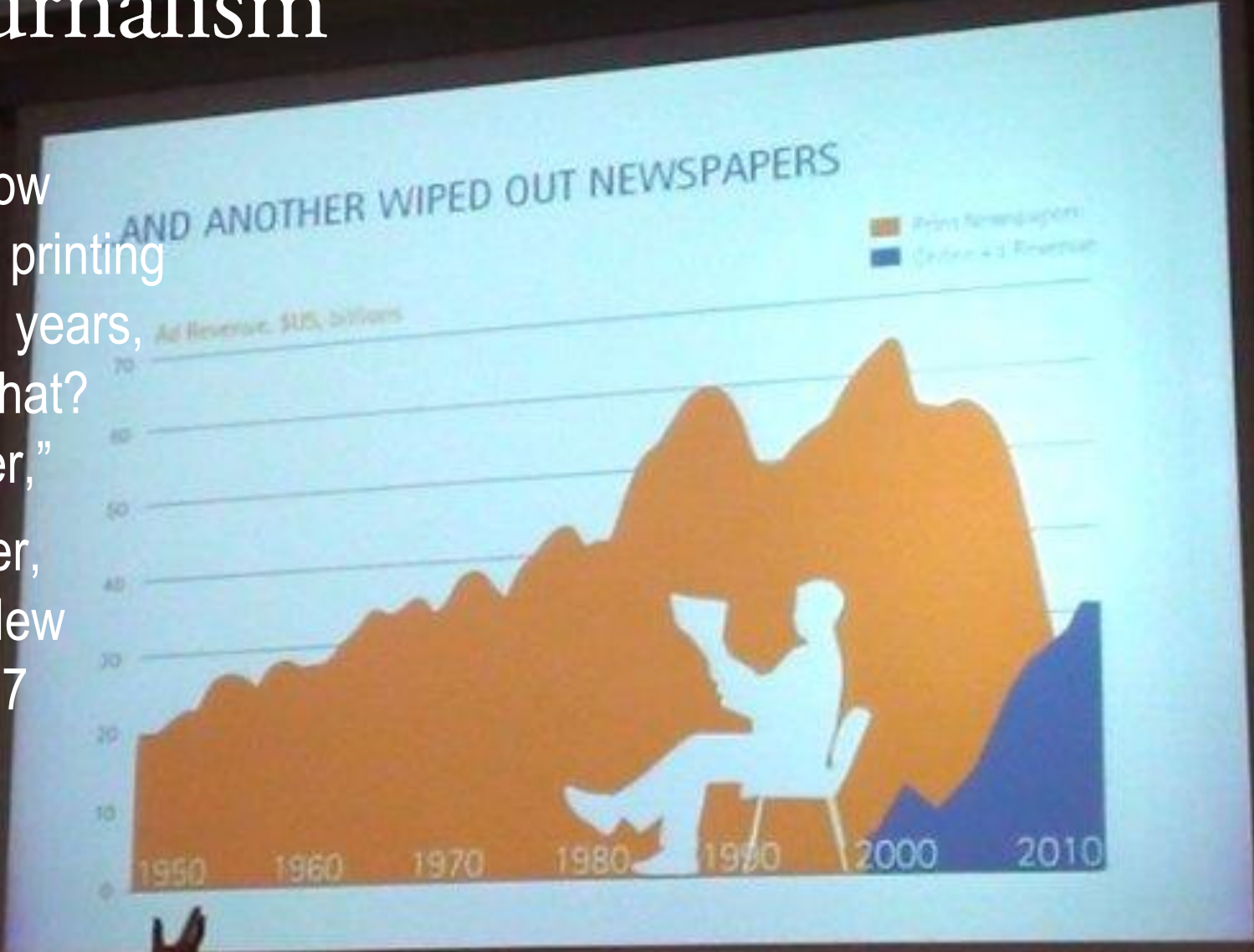
Disruptive technologies



The pinballs market has been disrupted by Playstations. Quite the same for newspapers...

Paper journalism

“I really don't know whether we'll be printing the Times in five years, and you know what? I don't care either,”
Arthur Sulzberger,
publisher, The New York Times, 2007



Better and cheaper products

HOW CAN SOMETHING BE BETTER AND CHEAPER?
WHEN A COMPANY SPENDS LESS ON INNOVATION
THAN THE SAVINGS FROM DECLINING COSTS



DEFLATIONARY PRESSURES ON INNOVATION

- Crowdsourcing
- Open source communities
- Open innovation
- Open markets
- Nonstop seminars channels
- Crowdfunding

DEFLATIONARY PRESSURES ON COSTS

- Moore's Law effects on
- Core technologies
 - Sourcing
 - Manufacturing
 - Distribution
 - Selling
 - Servicing
 - Other costs

Open innovation may work better than innovation designed and implemented by companies.

Cheaper technology makes things cheaper



Thanks to technologies, an orchid grown in Africa can be carried to NY, NY, and sold at a lower price.

Disruptions in tourism

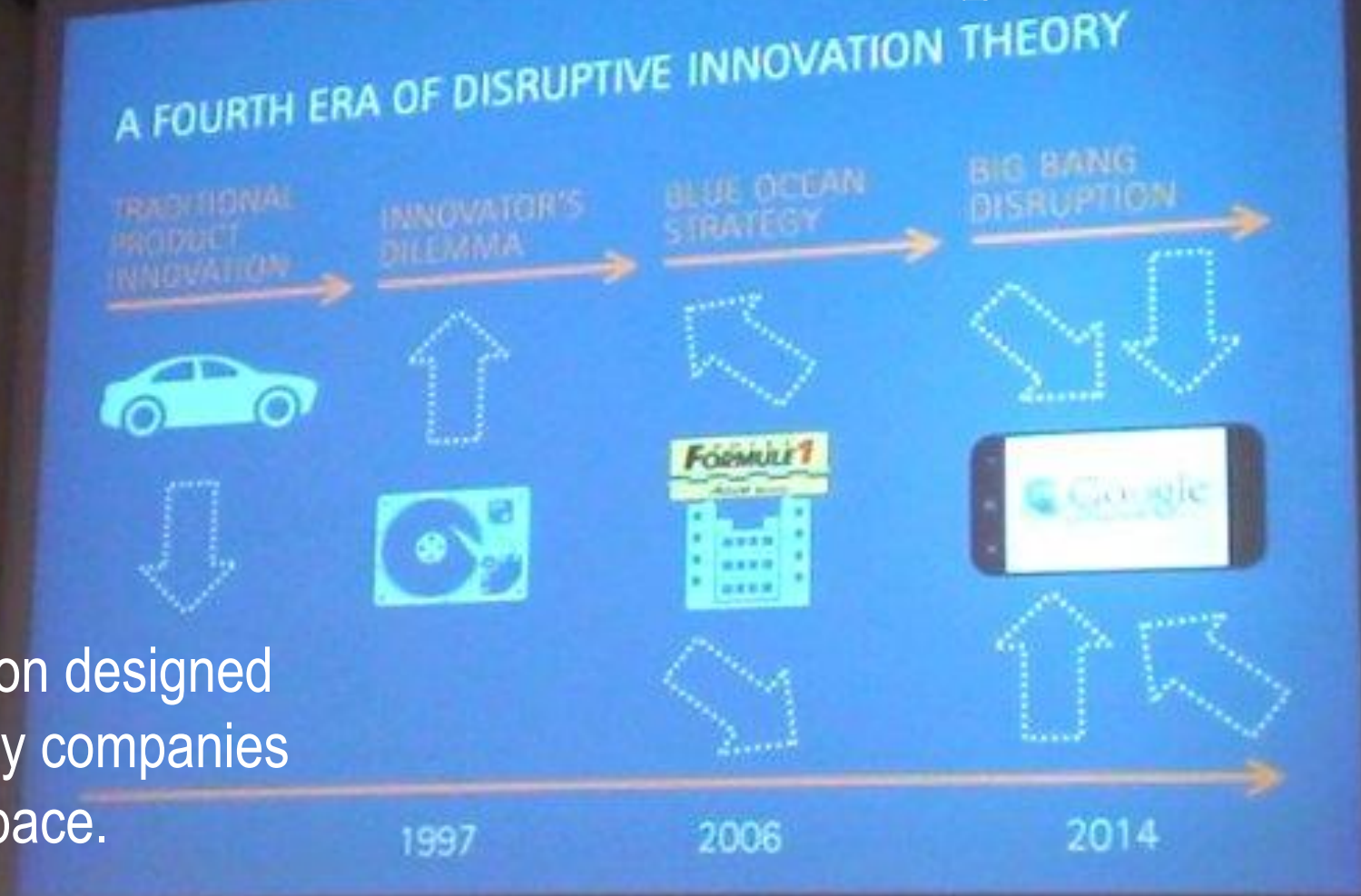
Six Big Bang Disruptors in twelve concern tourism.

1. Maps
2. Taxis
3. Hotels
4. Payments
5. Travel Agencies
6. Perhaps cameras, too

Industry	Big Bang Disruptor
Personalized GPS devices	Waze
Taxi services	Lyft, Side car
Hospitality - Hotels	Airbnb
PCs and Laptops	iPad
Financial Services - Payments	PayPal, Google Wallet, ISIS
Retail	amazon.com
Education	Coursera, U, edX
Travel agencies	Travelocity, Expedia, priceline
Yellow pages	yelp
Film rentals	Netflix, amazon
Video cameras	iPhone

By the way, Priceline is the mother company of Booking.com.

Traditional innovation vs. disruptions



Traditional innovation designed and implemented by companies hasn't kept up the pace.

Undisciplined innovation

UNDISCIPLINED STRATEGY
YOU CAN'T BEAT IT



Standalone GPS

\$100 - \$300

Intermittent update

Lack of real time context



Smartphone Navigation App

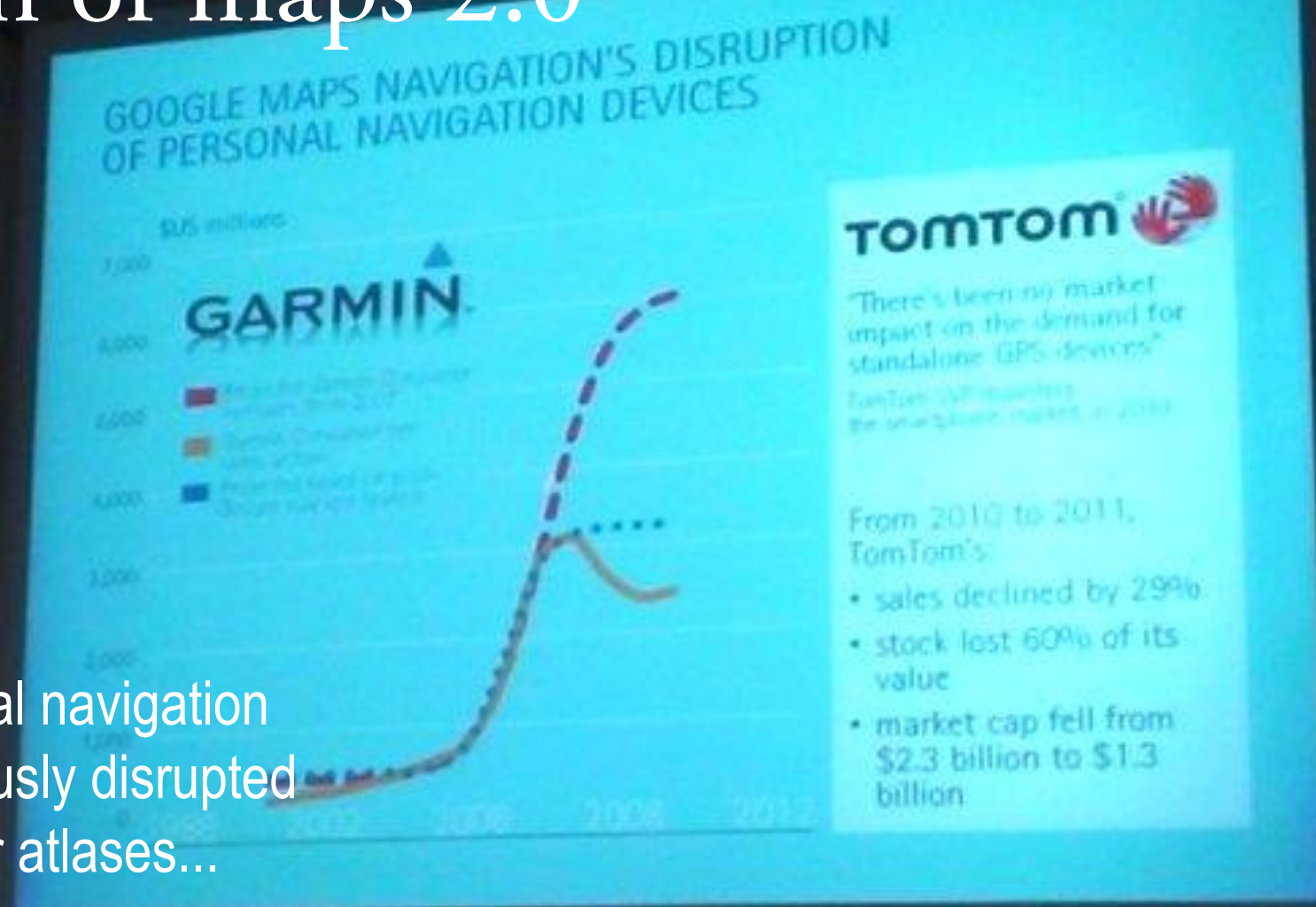
Free

Real time updates of data and software

Integrated with phone contacts and search

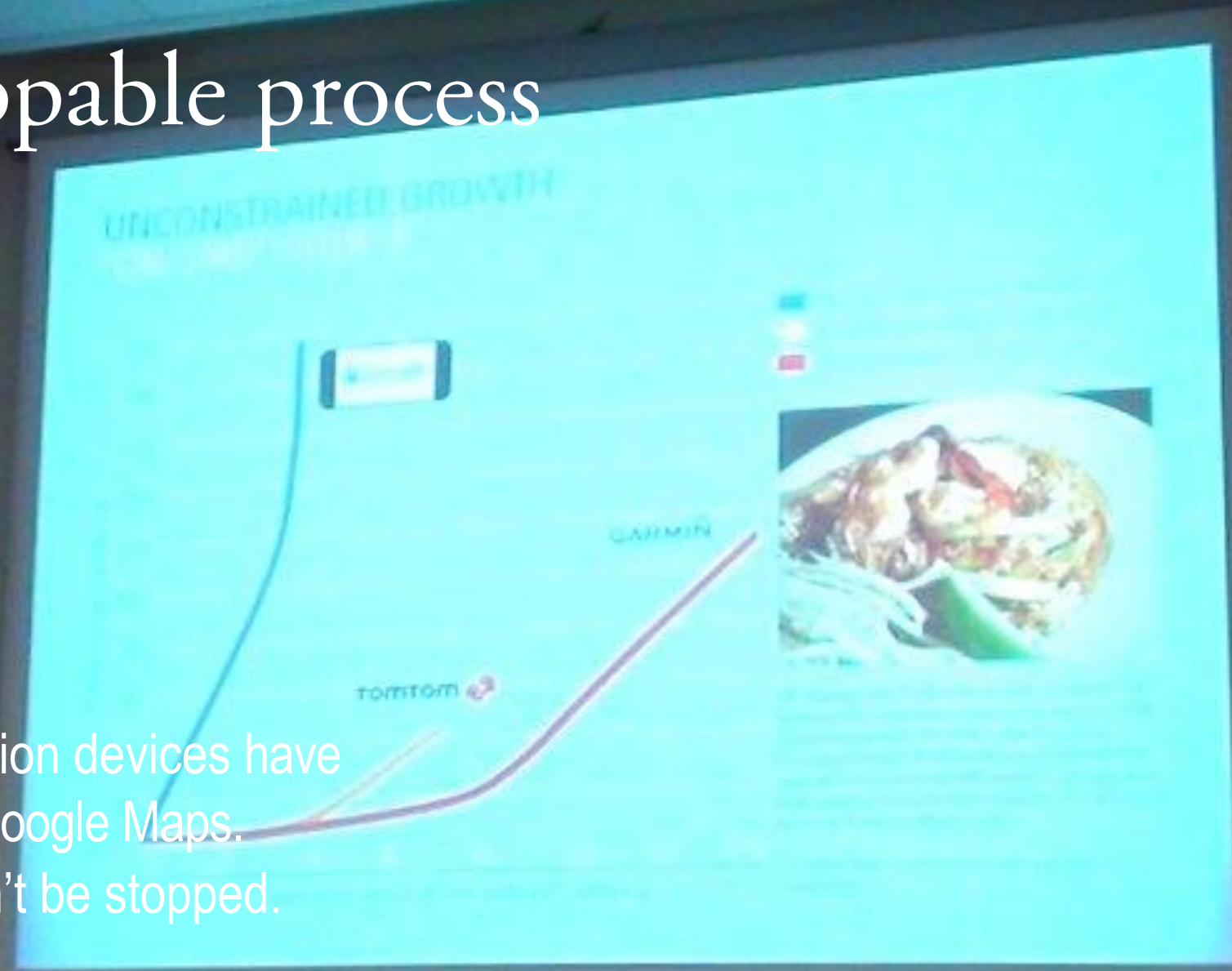
Big Bang disruptions provide users with better opportunities, and don't stick at previous parameters.

Disruption of maps 2.0



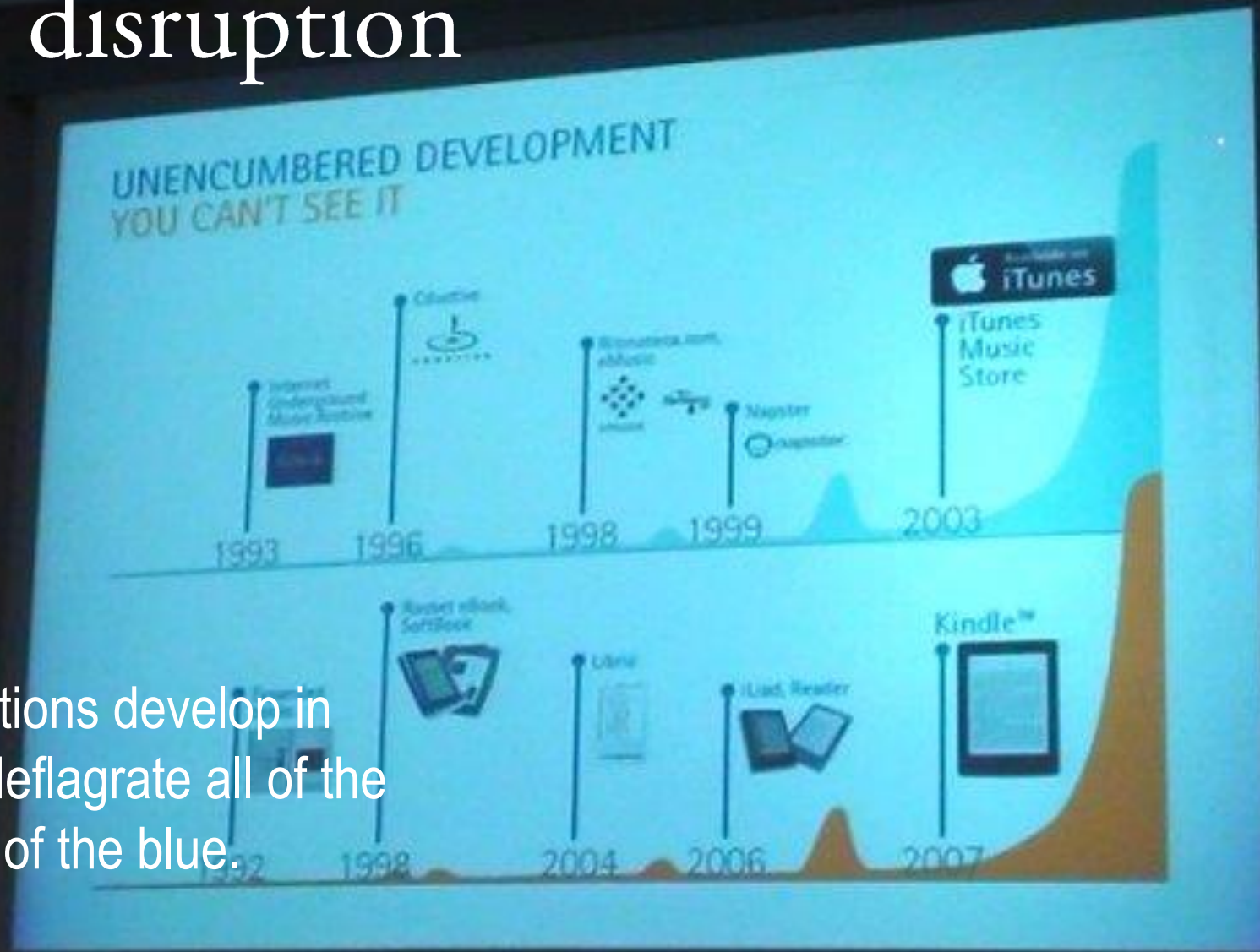
Exactly like personal navigation devices had previously disrupted the market of paper atlases...

An unstoppable process



... personal navigation devices have been disrupted by Google Maps. The process couldn't be stopped.

Invisible disruption



Big Bang disruptions develop in the dark. They deflagrate all of the sudden and out of the blue.

In a nutshell



By the way...

- Is **Pokémon Go** a disruptive technology?
- Is **BlaBlaCar** a disruptive technology?

Maybe not.

A disruption comes when **an existing market is broken**.

If a market keeps existing as it was – or a new market is created – we cannot talk of Big Bang disruptions.

- Pokémon Go **hasn't broken** the gaming market.
- Before BlaBlaCar there **wasn't any** hitchhiking **market**.



Become someone else's components

UNDERSTAND THE REAL VALUE OF RESIDUAL VALUE
EXPLOIT COMBINATORIAL
INNOVATION
Become someone else's
components



Kodak, which produced chemical films for photos, went bankrupt.
Fuji found a new role in healthcare.

Not disruptive, yet coming

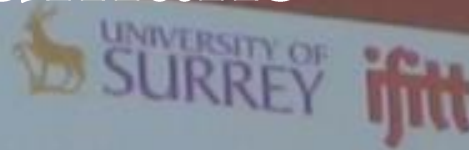


Parallel to disruptions, **old-style technological innovation** is anyway at work. It's incremental rather than disruptive, but it's brewing and growing.

- **Artificial Intelligence (AI)** in tourism means that data gathered from tourists can be used to **offer** them tourist **products and services** they are more likely to pay for – exactly as it happens with web advertisements already.
- **Machine Translation** in tourism means that staffs can communicate with global tourists even if they don't speak nor understand their languages.
- **Machine Learning** means that the tourism industry can rely on technologies that increasingly help understanding what the tourists' needs are.

Computers acting like humans

Artificial Intelligence



Natural Language Processing
Knowledge Representation
Automated Reasoning
Machine Learning
Computer Vision
Robotics

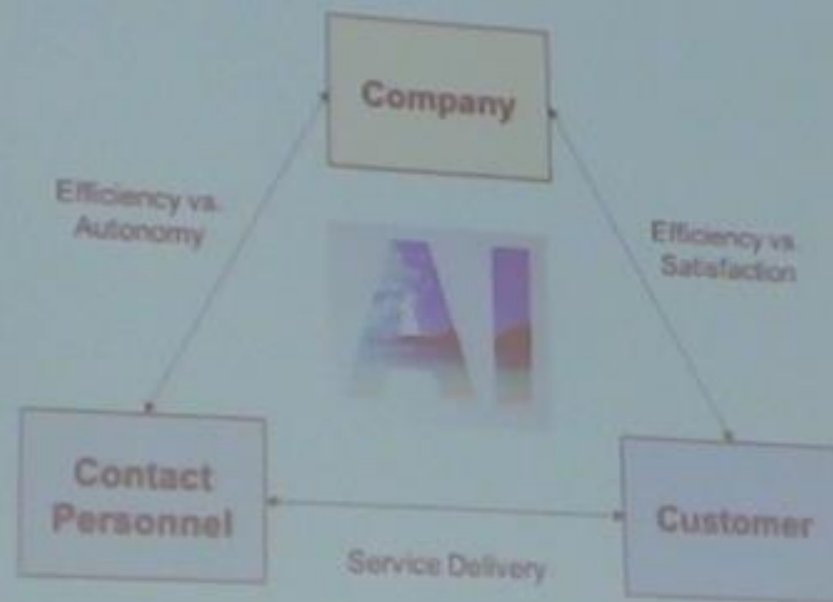


Russell & Norvig, 2003

Pictures taken by your lecturer at a presentation held by **Iis Tussyadiah**, president of Ifitt (the International Federation for Information Technologies in Travel & Tourism), on November 15, 2018

Artificial intelligence at the centre

Tourism Encounter



Iris Tussyadiah, president of Ifitt
(the International Federation for Information Technologies in Travel & Tourism)

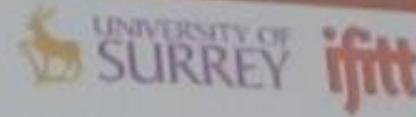
Robotics

Robots that welcome guest in hotels, and chat with them, have already been introduced. Paolo Pepper is a robot which was presented as early as in 2017 at the BTO (Buy Tourism on Line) in Florence. Robot concierges were at work already in Sasebo, Japan.



What about humans?

Implications



Roles of Employees

Substitution vs Augmentation

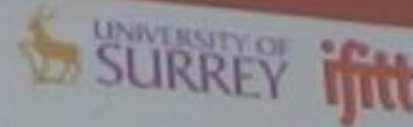
Provision of Decent Work



Iris Tussyadiah, president of Ifitt
(the International Federation for Information Technologies in Travel & Tourism)

Questions to be faced

AI: Key Priorities



- Economic and social impacts of AI
- Ethical and legal issues around AI
- Verification and validation
- Control (human-in-the-loop)

Russell, Dewey, & Teemark, 2015

Iris Tussyadiah, president of Ifitt
(the International Federation for Information Technologies in Travel & Tourism)

We are all connected

What is relevant to us, is considering that both tourism and pandemics are network affairs. So is digital. So we are.

image credit to hxdata.chisa.edu.cn

Key points

1. Disruptions...
2. happened, happen, and will certainly happen again.
3. They break pre-existing markets,
4. are unexpected, invisible, and unstoppable,
5. have seriously affected tourism,
6. but must be managed.
7. Artificial intelligence is booming.

