



Military Training Technology Trends

Andy Fawkes



Military Training and Education

- Scale - 257,160 Military/Civilian (2011)
- Depth – eg. Fighter Pilot, Reactor Operator
- Breadth – Apache Pilot through to Cook
- Flexibility – Current Operations

What is Simulation?

Simulation is the imitation of the operation of a real-world process or system over time

Typically a military training simulation is interactive, with a “human in the loop”
eg. a flight simulator or driving simulator



Why Use Simulation?



Improve
Training



Safety



Reduce
Costs

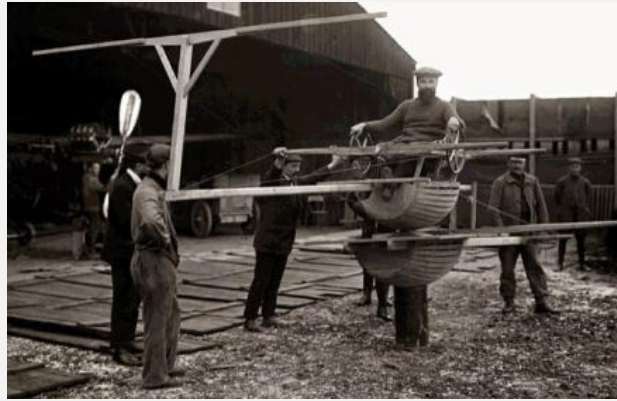


Reduce
Environmental
Impact

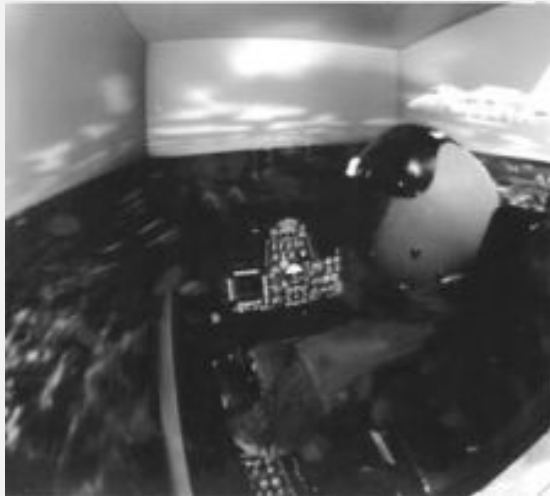


Reduce Time
to Train

Predominantly Mechanical Era



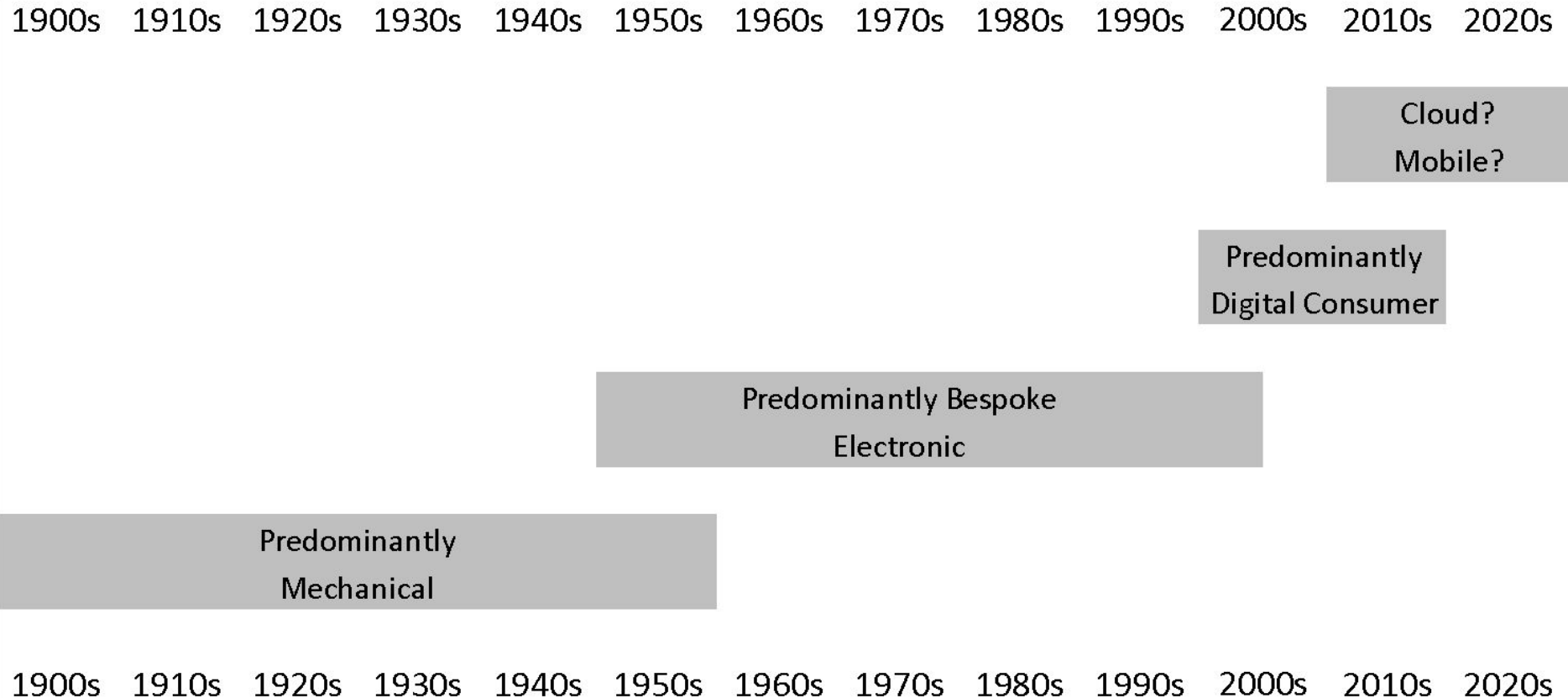
Predominantly Bespoke Electronic Era



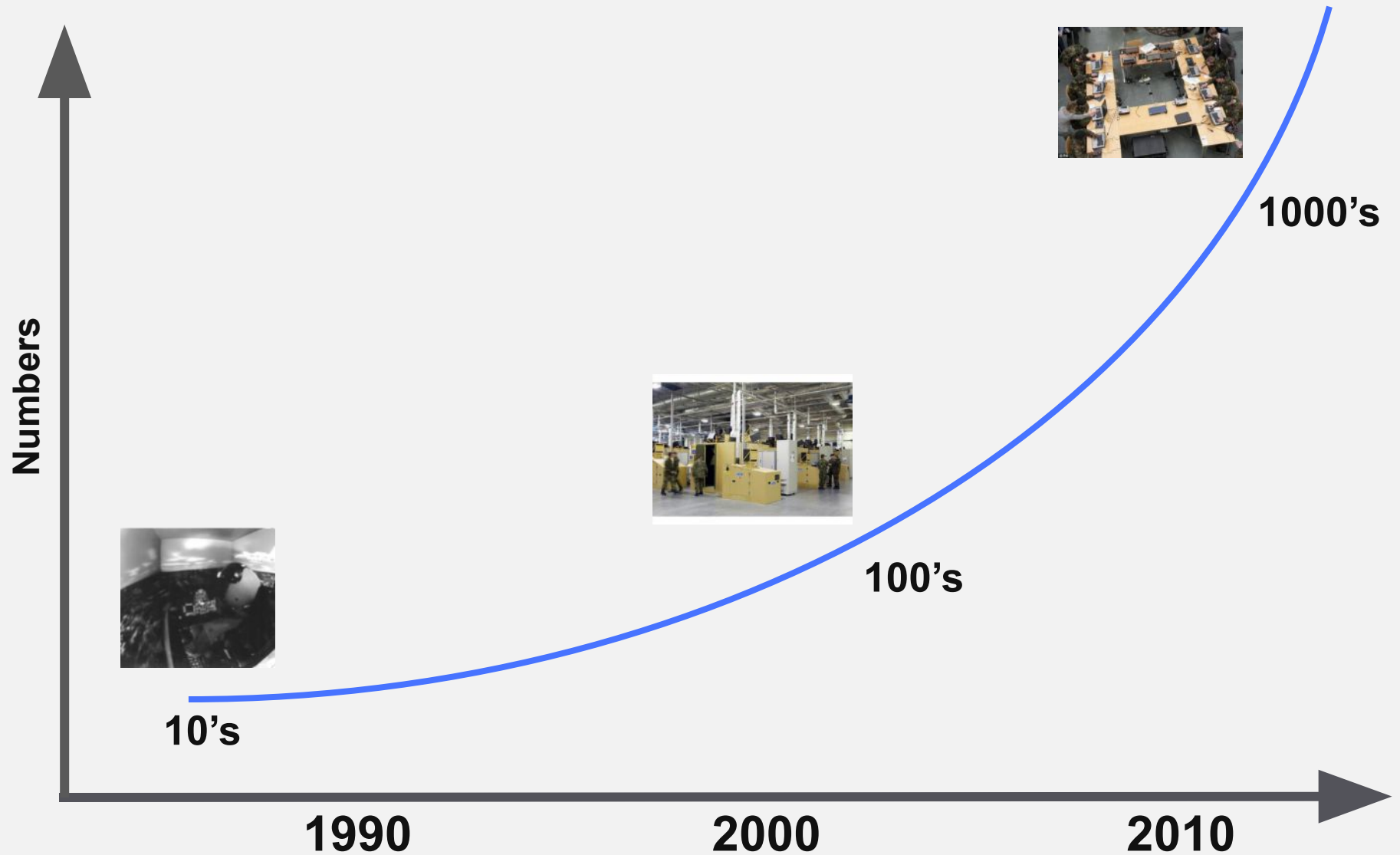
Predominantly Consumer-Driven Digital Era



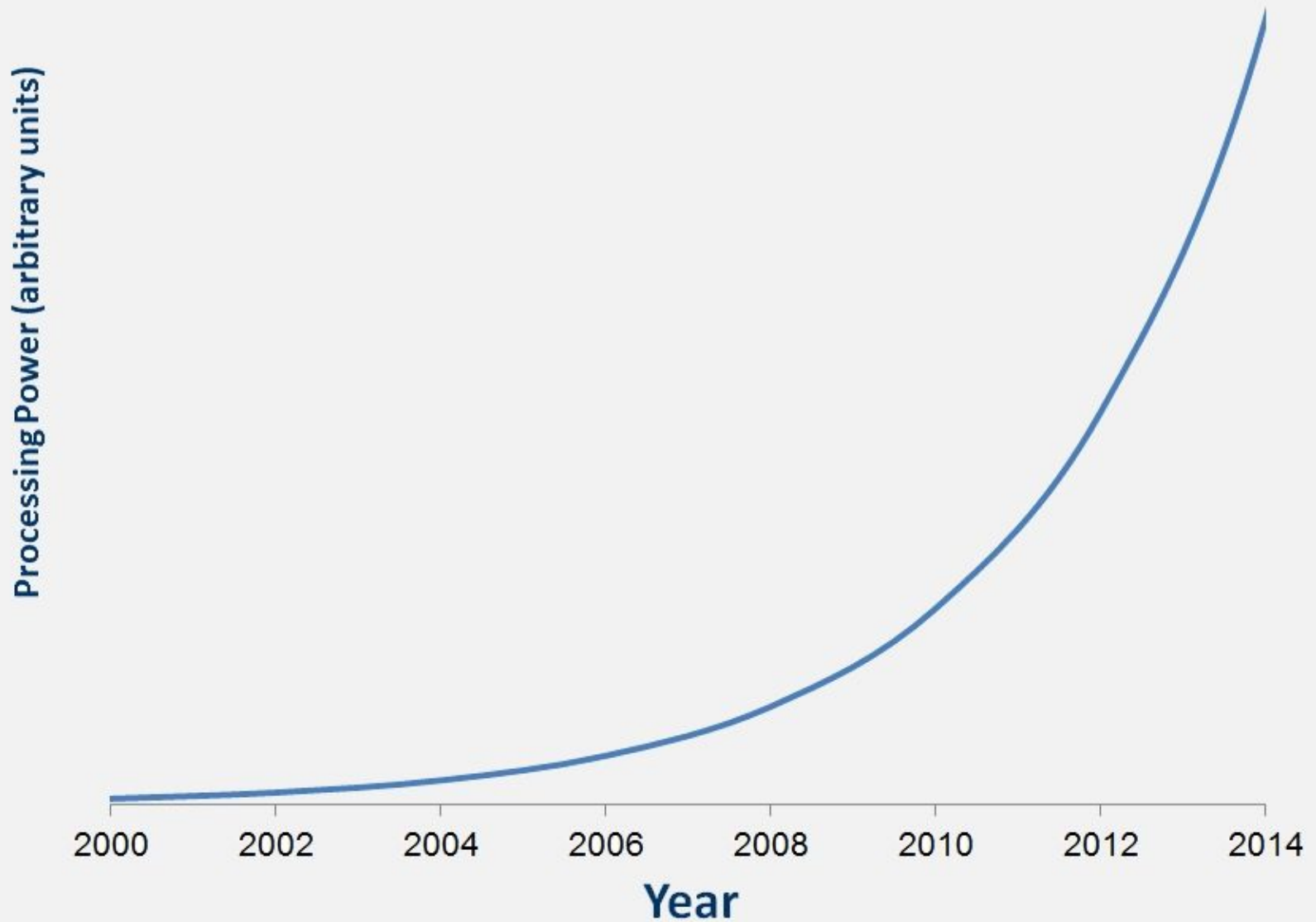
Military Simulation Trends



Military Access to Digital Simulation



Processing Power (Moore's Law)



Microsoft Flight Simulator

1980



1982



1984



1988



1989



1995



1996



1999



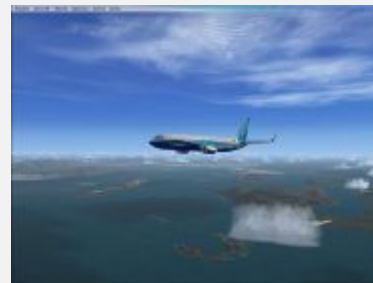
2001



2003



2006



2009



Modern Computer Games Based Simulation Software

Bohemia's VBS2 (Arma 2 Engine)

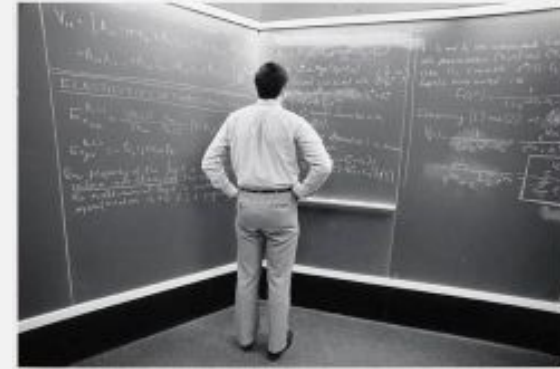
- Land Convoy Collective Training
- IED Training & Situational Awareness
- Aviation Tactics Training
- Gunnery and Crew Training
- Close Weapon Gunnery Training
- Anti-Piracy & Boarding Operations Training
- Fixed Wing Aviation Mission Training
- Maritime Submarine Training Capability
- Cultural Awareness & Language Training
- Engineer Training
- Army Recruiting
- E-Learning



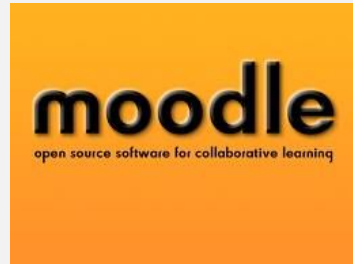
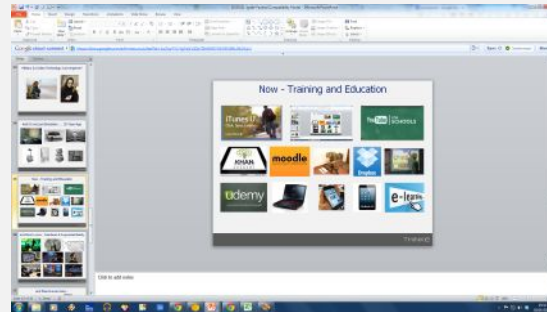
Military & Civilian Technology Convergence?



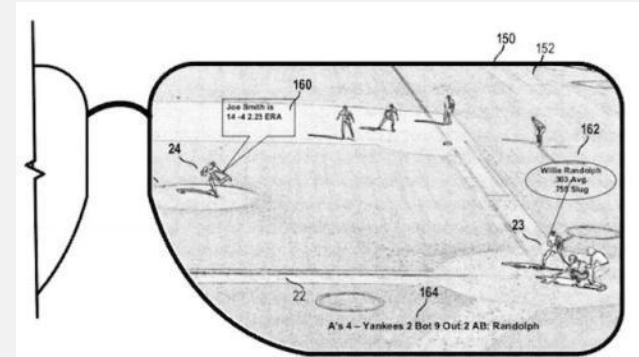
And it's not just Simulation..... 20 Years Ago



Now - Training and Education



and there's more... Interfaces & Augmented Reality



and there's even more...

Sensors

“Internet of Things”

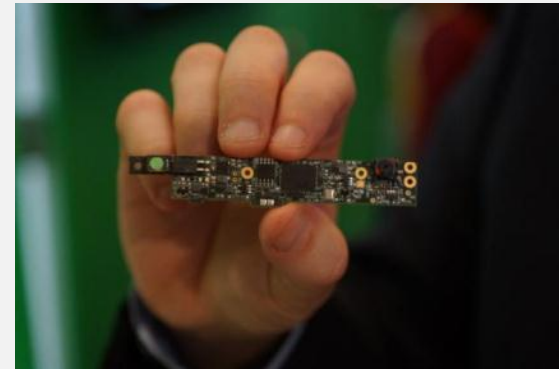


Image Paul Sloan/CNET

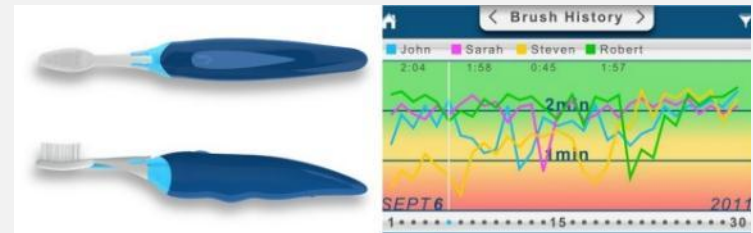


Image Beam Technologies

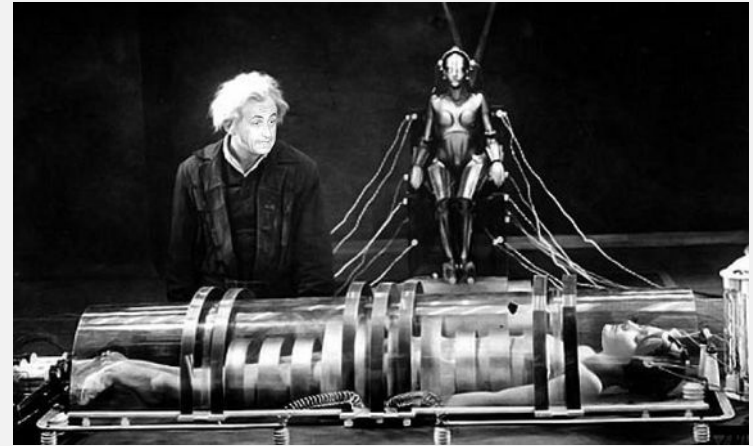


Image Fitbit

Train Less.. Train at All?



Diluting the Human Experience?



Putting Technology in Perspective



Your age

0

5

10

15

20

25

30

35

40

45

50

55

60

2013

2008

2003

1998

1993

1988

1983

1978

1973

1968

1963

1958

1953