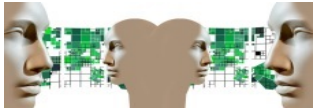
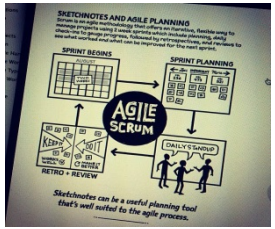
La transformación Digital en la Industria: Industria 4.0. Fabricación Aditiva

II CONGRESO NACIONAL SOBRE FABRICACIÓN ADITIVA.
AUDITORIO VICTOR VILLEGAS
MURCIA, 4 DE DICIEMBRE 2019.





Víctor Paluzíe Ávila
PDG IESE Business School
Industry 4.0 IESE Business School
PADE Transformación Digital IESE

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La Transformación Digital

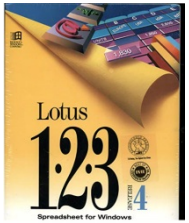




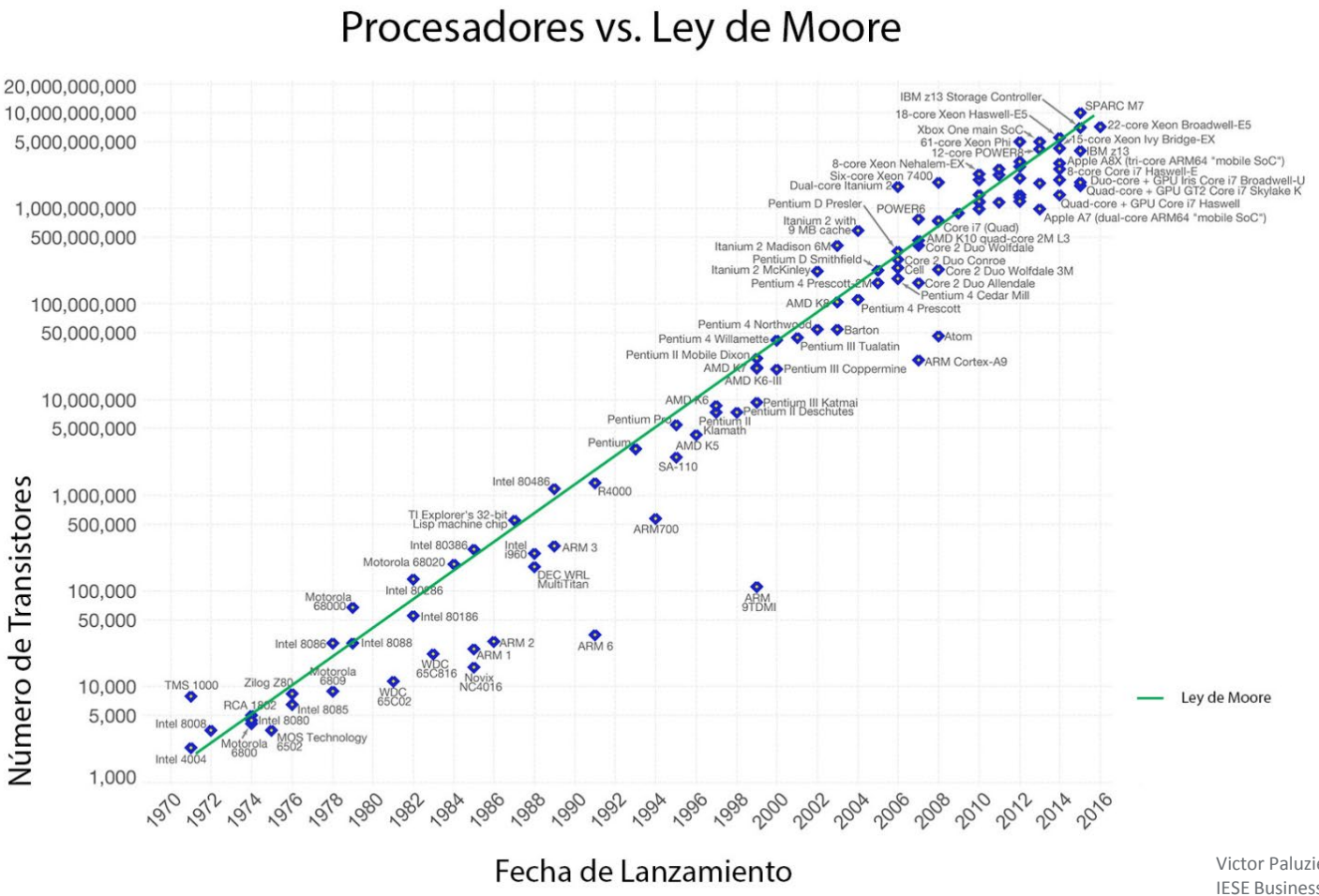







Ley de Moore


Procesadores vs. Ley de Moore
Número de Transistores
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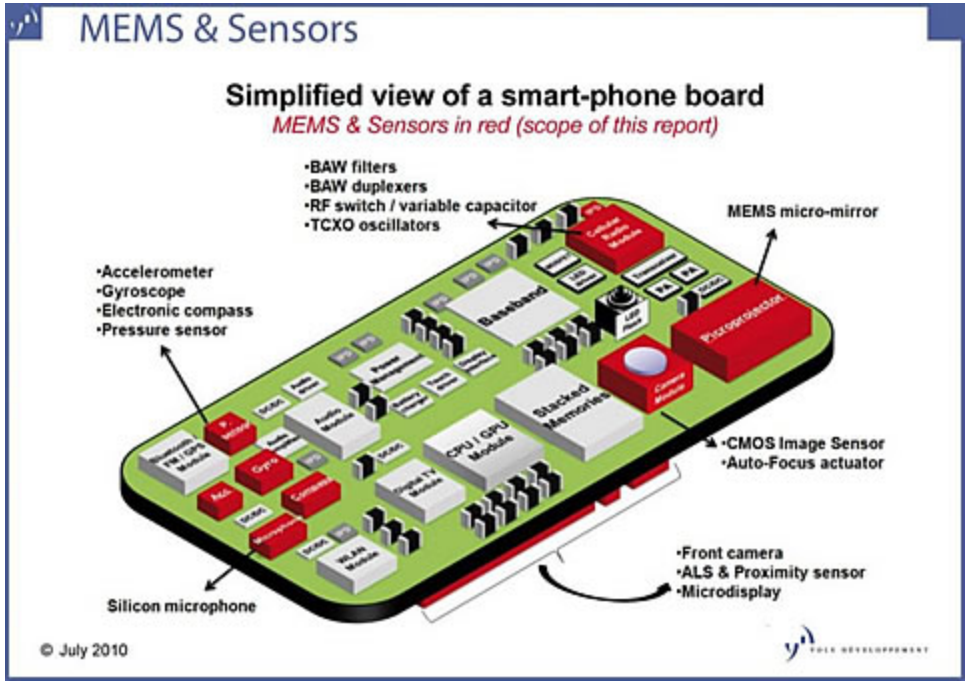
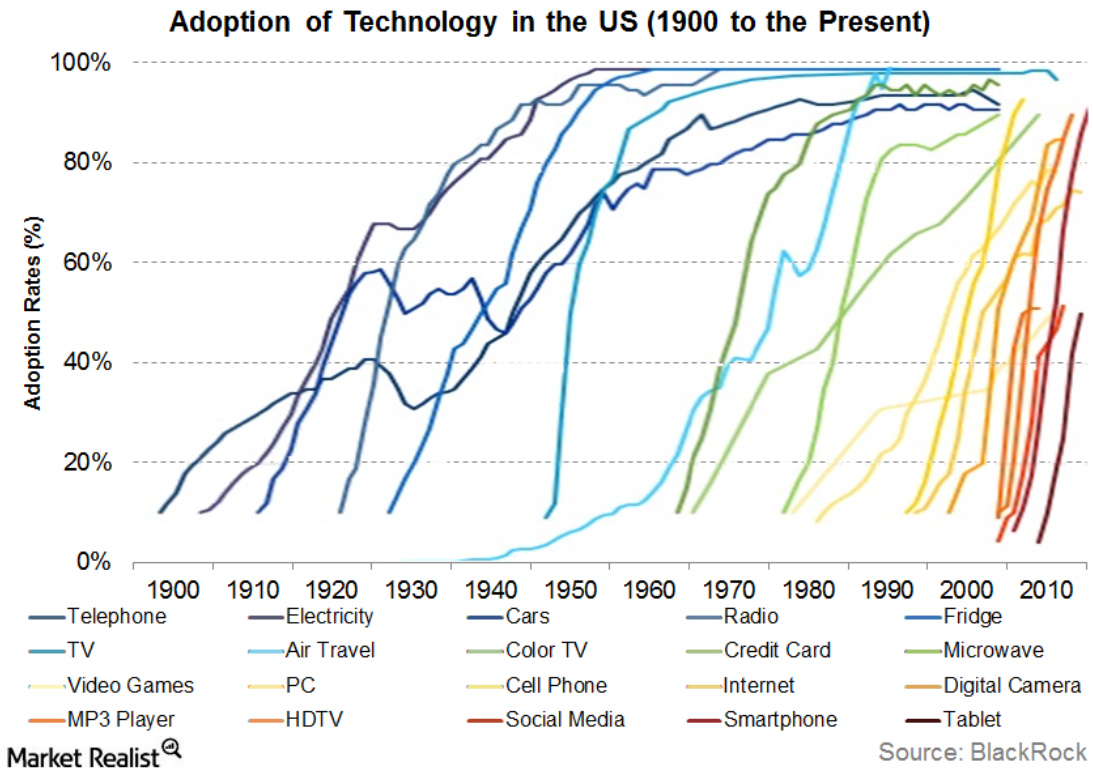
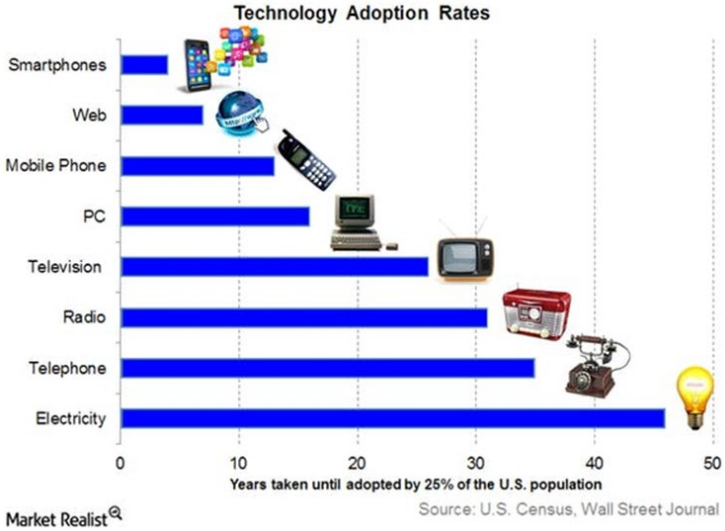
IBM z13 Storage Controller
SPARC M7
18-core Xeon Haswell-E5
22-core Xeon Broadwell-E5
Xbox One main SoC
61-core Xeon Phi
15-core Xeon Ivy Bridge-EX
12-core POWER8
IBM z13
Apple A8X (tri-core ARM64 "mobile SoC")
8-core Xeon Nehalem-EX
8-core Core i7 Haswell-E
Six-core Xeon 7400
Duo-core + GPU Iris Core i7 Broadwell-U
Quad-core + GPU GT2 Core i7 Skylake K
Dual-core Itanium 2
Quad-core + GPU Core i7 Haswell
Pentium D Presler
POWER6
Apple A7 (dual-core ARM64 "mobile SoC")
Itanium 2 with 9 MB cache
Core i7 (Quad)
AMD K10 quad-core 2M L3
Itanium 2 Madison 6M
Core 2 Duo Wolfdale
Pentium D Smithfield
Core 2 Duo Conroe
Itanium 2 McKinley
Cell
Core 2 Duo Wolfdale 3M
Pentium 4 Prescott 2M
Core 2 Duo Allendale
Pentium 4 Cedar Mill
AMD K8
Pentium 4 Prescott
Pentium 4 Northwood
Barton
Pentium 4 Willamette
Atom
Pentium III Tualatin
Pentium II Mobile Dixon
ARM Cortex-A9
AMD K7
Pentium III Coppermine
AMD K6-III
AMD K6
Pentium III Katmai
Pentium II Deschutes
Pentium Pro
Pentium II Klamath
Pentium
AMD K5
SA-110
Intel 80486
R4000
TI Explorer's 32-bit Lisp machine chip
ARM700
Intel 80386
Intel i960
ARM 3
Motorola 68020
DEC WRL MultiTitan
Intel 80286
Motorola 68000
ARM 9TDMI
Intel 80186
Intel 8086
Intel 8088
ARM 2
ARM 6
ARM 1
WDC 65C816
Novix NC4016
Motorola 6809
TMS 1000
Zilog Z80
WDC 65C02
RCA 1802
Intel 8085
Intel 8008
Intel 8080
MOS Technology 6502
Motorola 6800
Intel 4004
Ley de Moore

La Transformación Digital se transforma en Radical

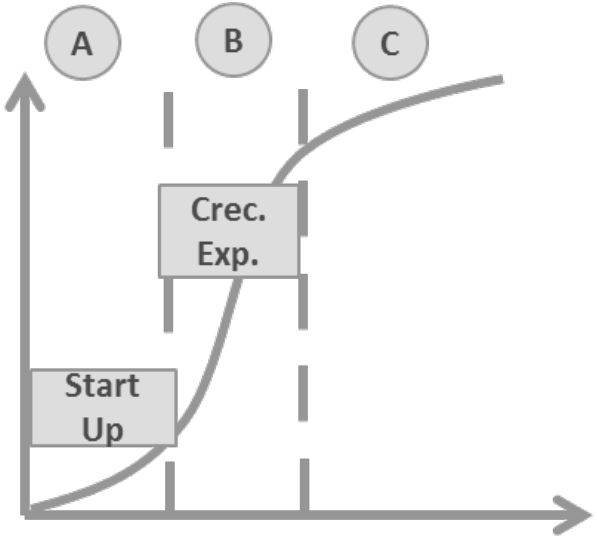


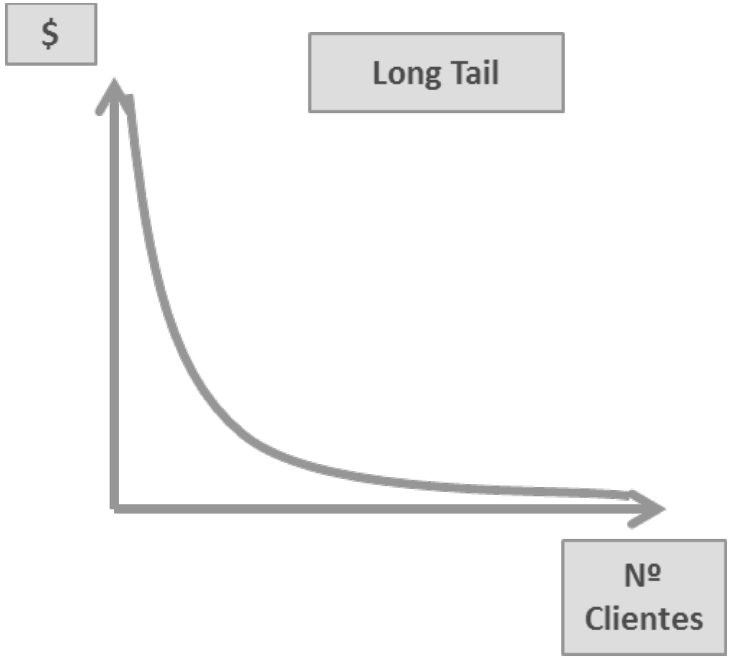
La Transformación Digital se transforma en Radical



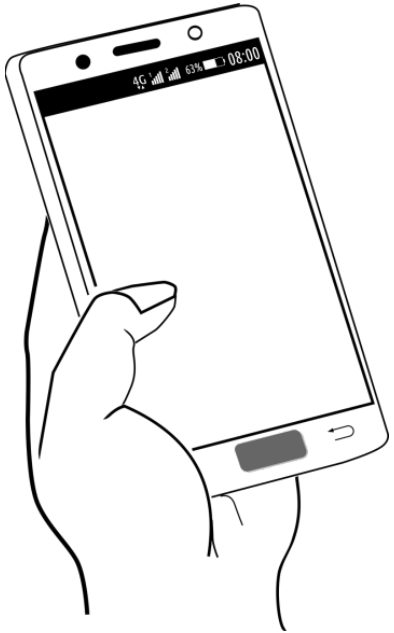


La Transformación Digital se transforma en Radical





La Transformación Digital Radical

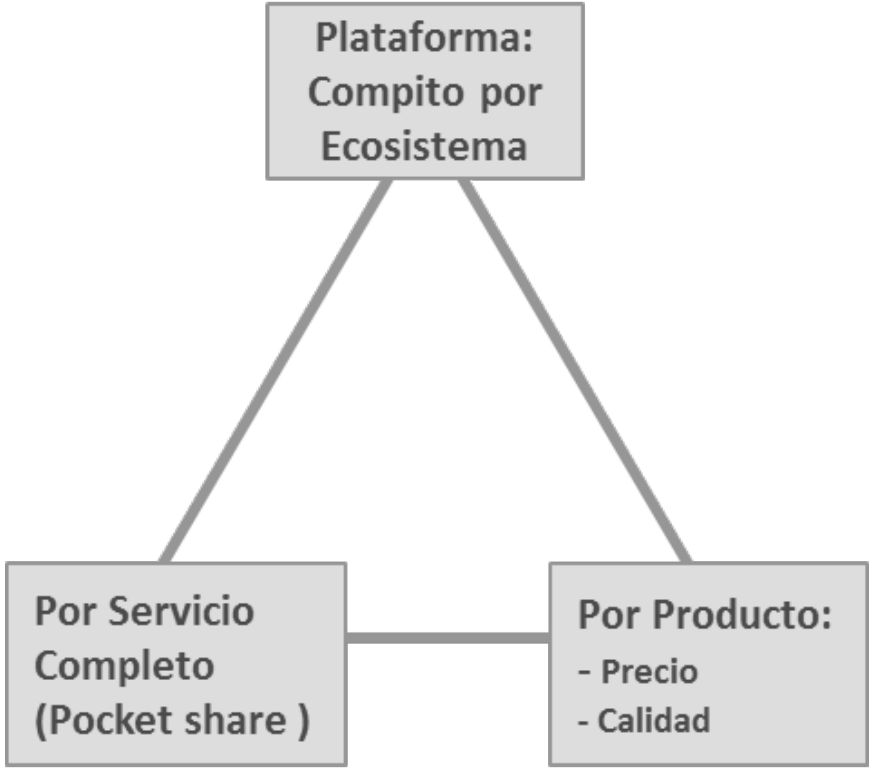


IPV6:

670 mil billones de direcciones x mm^2 de superficie de la tierra

- CONSUMERIZACIÓN
- DENSIDAD DIGITAL

Modelo Delta



La Transformación Digital Radical

Top 5 Publicly Traded Companies by Market Capitalization — Digital / Other

2001	GE	Microsoft	Exxon	Citibank	Walmart
	$406B	$365B	$272B	$261B	$260B
2016	Apple	Alphabet	Microsoft	Amazon	Facebook
	$582B	$556B	$452B	$364B	$359B

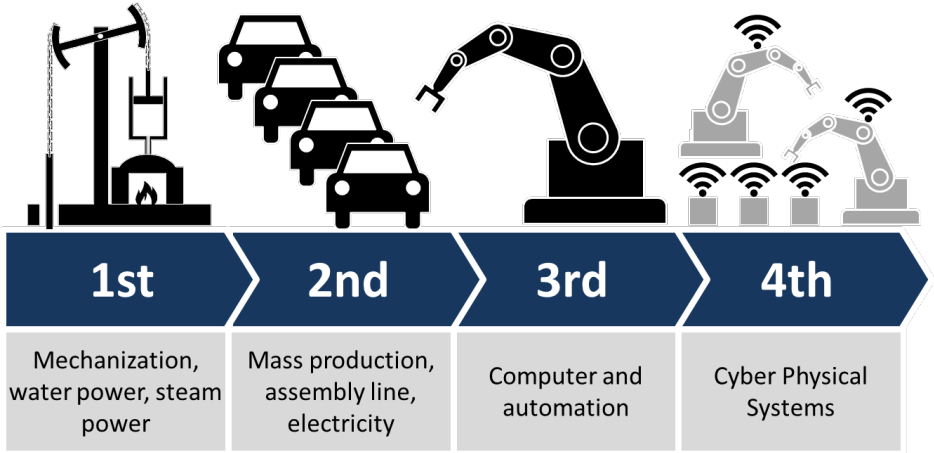
→ Digital has beaten everything else!

Fuente EOS

Victor Paluzie
IESE Business School PDG

La Industria 4.0

- QUE OCURRE CON LA INDUSTRIA
- LA INDUSTRIA MANUFACTURERA
- LA FABRICACION ADITIVA



La Fabricacion Aditiva: Panorama actual

The Production of the Future is Digital

Additive Manufacturing is Digital

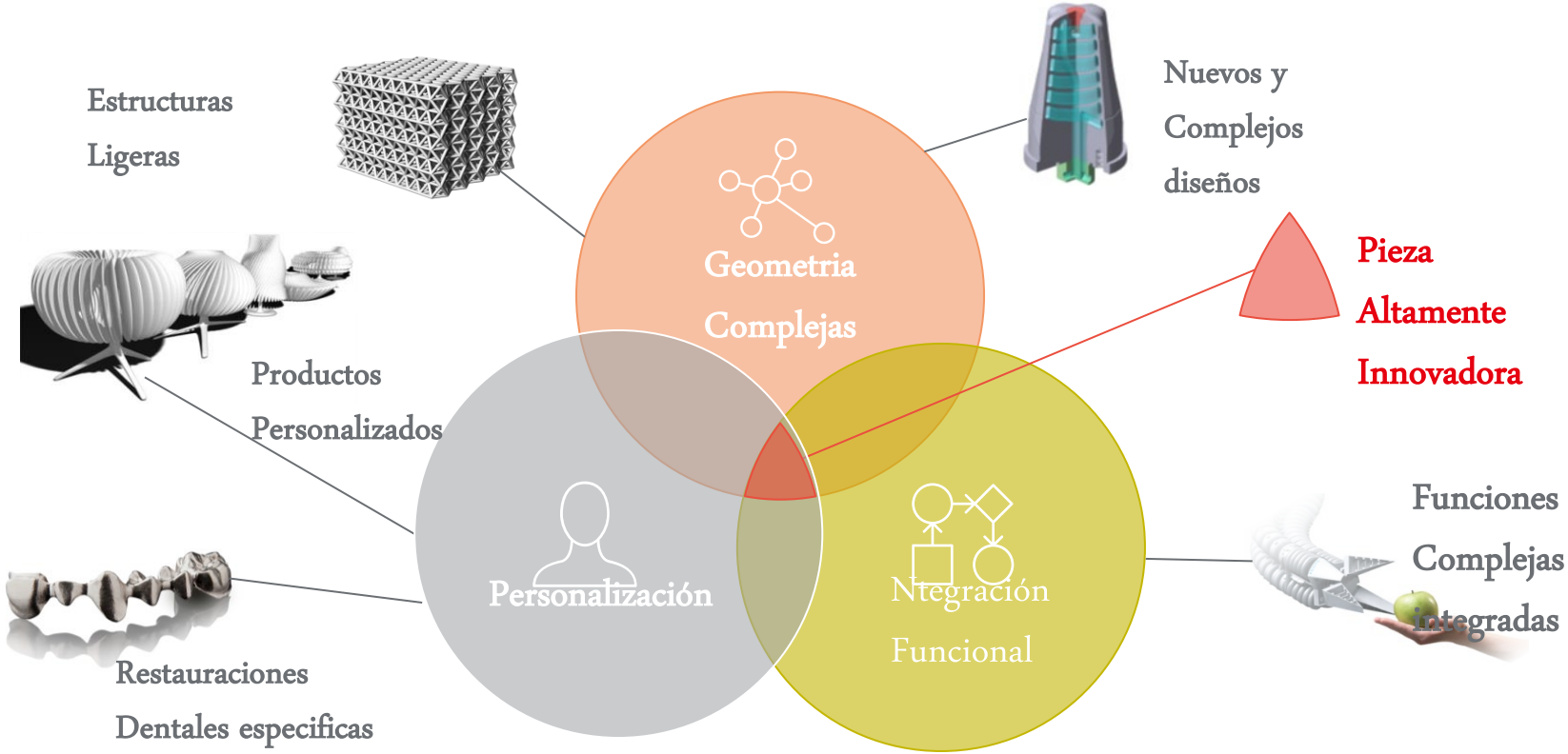
+

=

Fuente EOS

La Fabricacion Aditiva: Panorama actual

Caracteristicas de una Pieza Altamente Innovadora



Fuente EOS

La Fabricacion Aditiva: Panorama actual

“ASSET SPECIFICITY”

y

“ASSET TRAP”

La Fabricacion Aditiva: Panorama actual

The technology is evolving …

Yesterday:
Prototyping

Technological capabilities

Today:
Pre-production

- Part quality
- Process robustness
- Cost per part

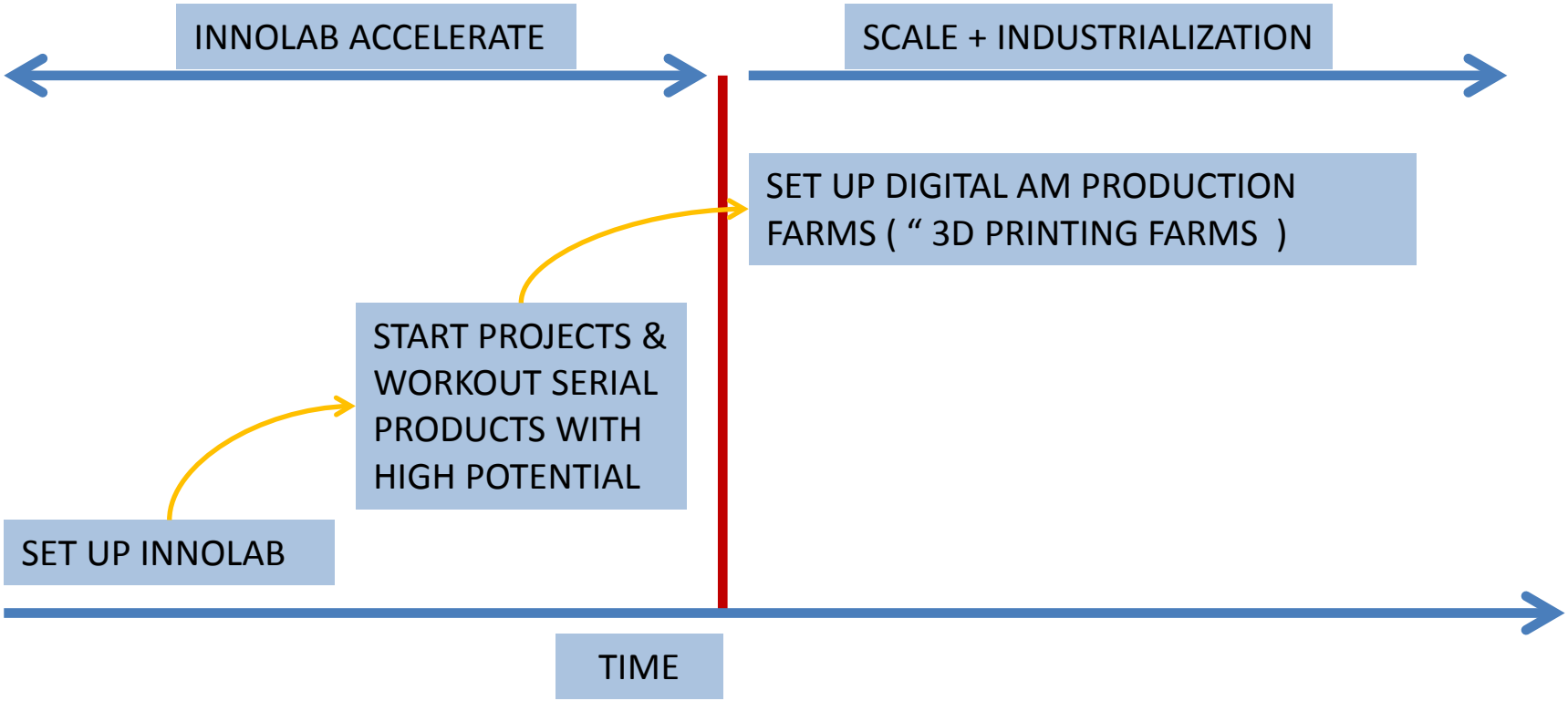
Until 2020:
Production ramp up

- Quality control
- Total cost (TCO)
- Automation
- Technology integration

Fuente EOS

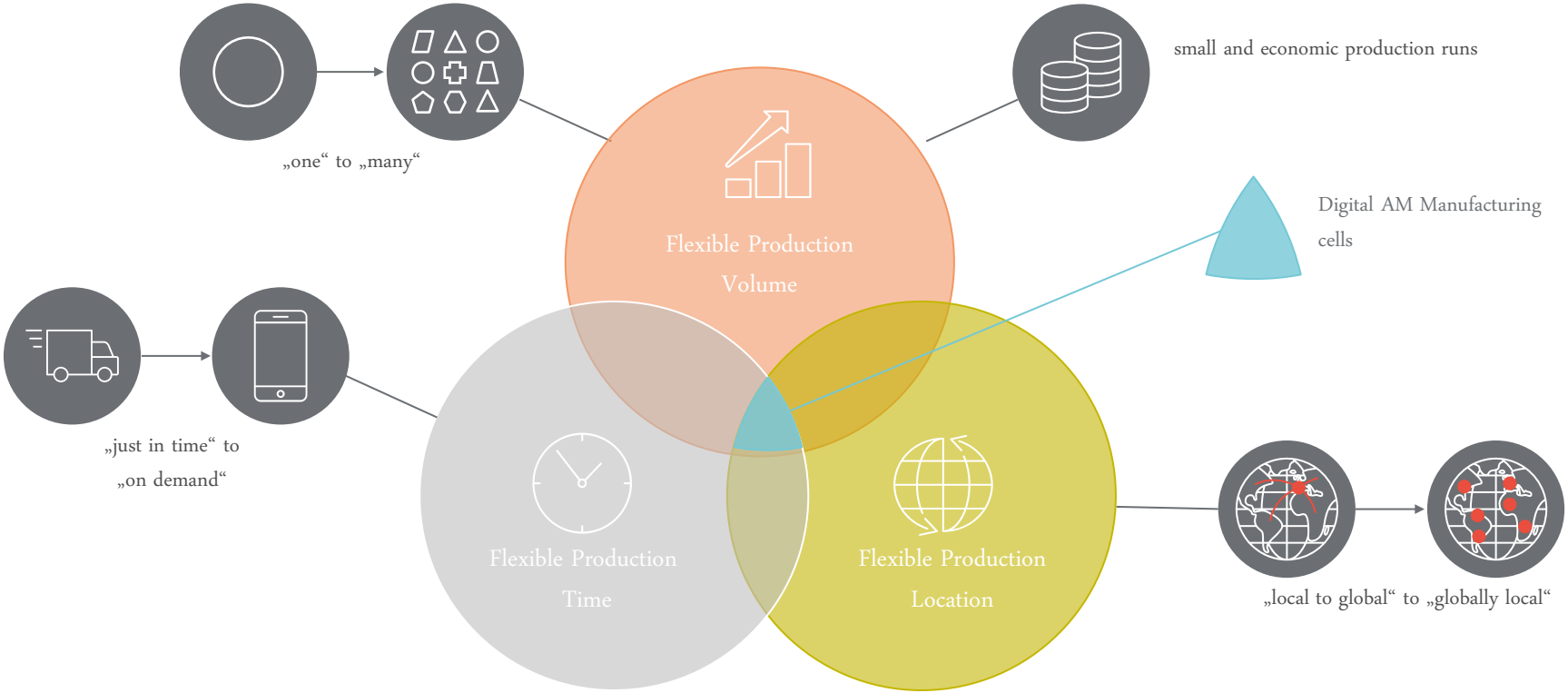
Additive Manufacturing is a key technology for advanced industrial production.

Fuente EOS



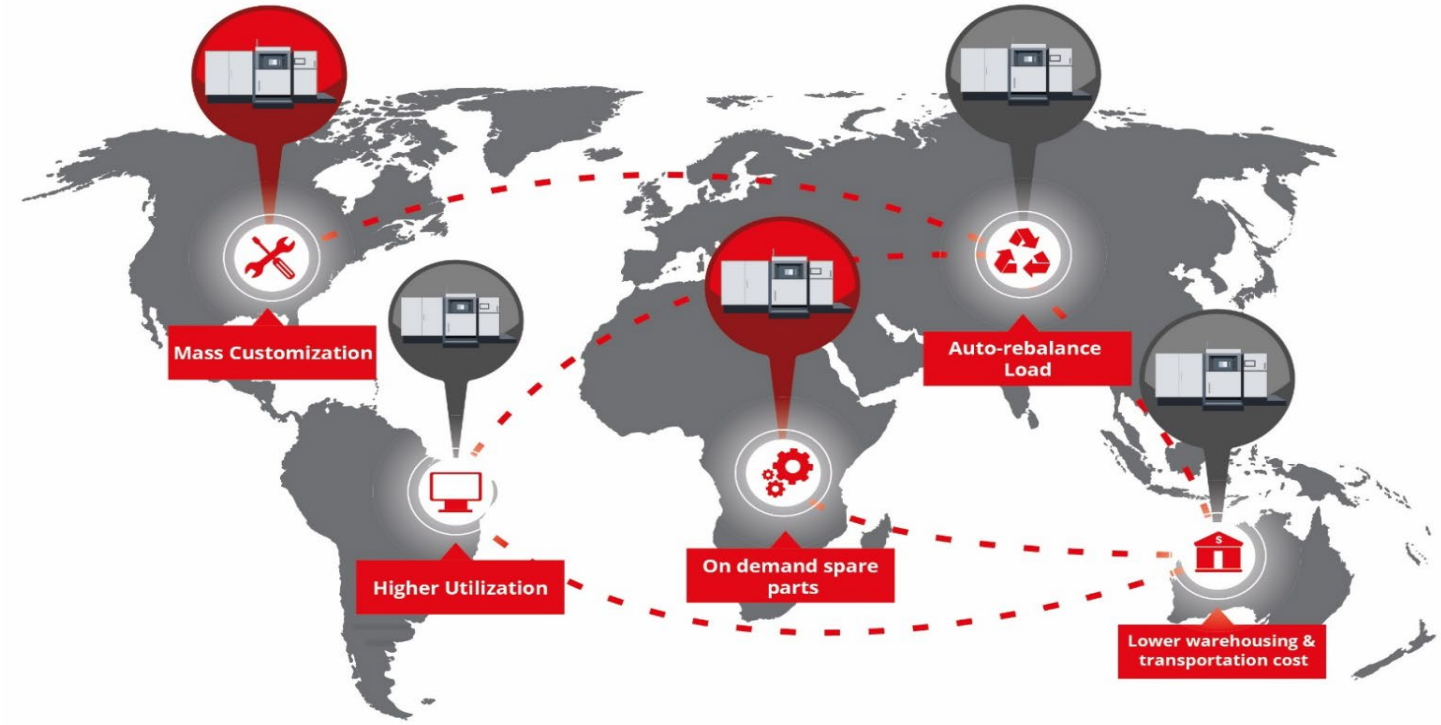
Source: Victor Paluzie
IESE Business School PDG

Characteristics of a highly efficient AM Production Chain



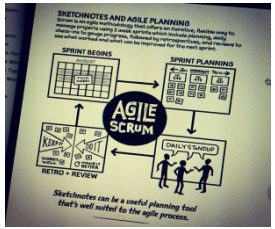
Fuente EOS

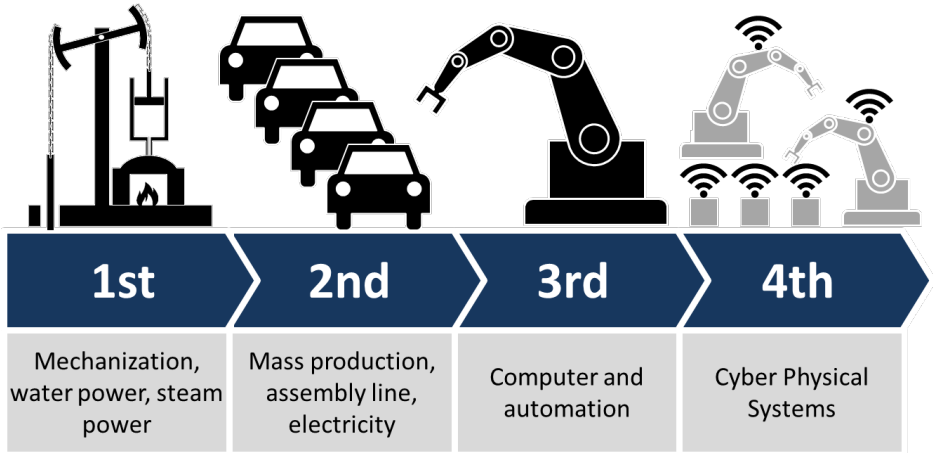
The factory of tomorrow:
Decentralized manufacturing hubs – a ‘global integration’



Fuente EOS

La Industria 4.0





Os invitamos a atravesar la puerta de la Transformación Digital en la Industria.
Es Disruptiva y requiere de Visión y Estrategia.
Os acompañaremos y apoyaremos, Sumamos ya 30 años haciéndolo con EOS GmbH !!

Q & A

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