

Digitalización en la industria

Cercle d'Economia

Sitges 2016

Pere Homs

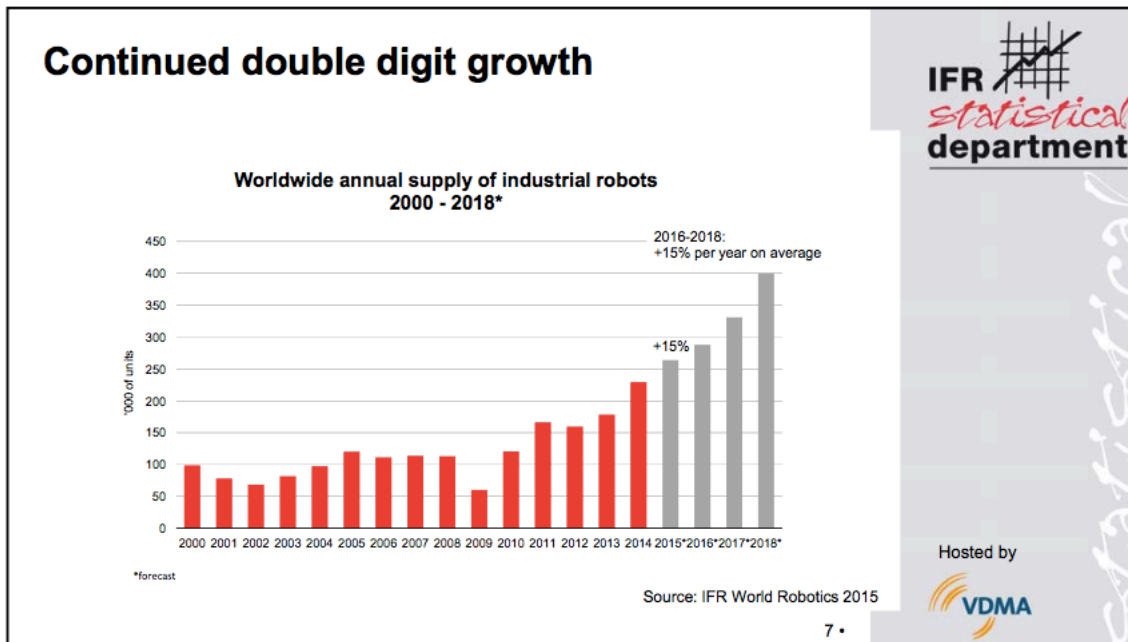
Enginyers Industrials de Catalunya



Digitalización en la industria

- Industria 4.0 – 4a Revolución Industrial – Smart Factory – Digitalización... Industria 5.0!
- Automatización – Robotización – Digitalización: *drivers*
- Tecnologías de producción – conectividad – computación
- Sistemas ciberfísicos. Un caso paradigmático: robótica
- Ganadores y perdedores
- Cifras
- Personas

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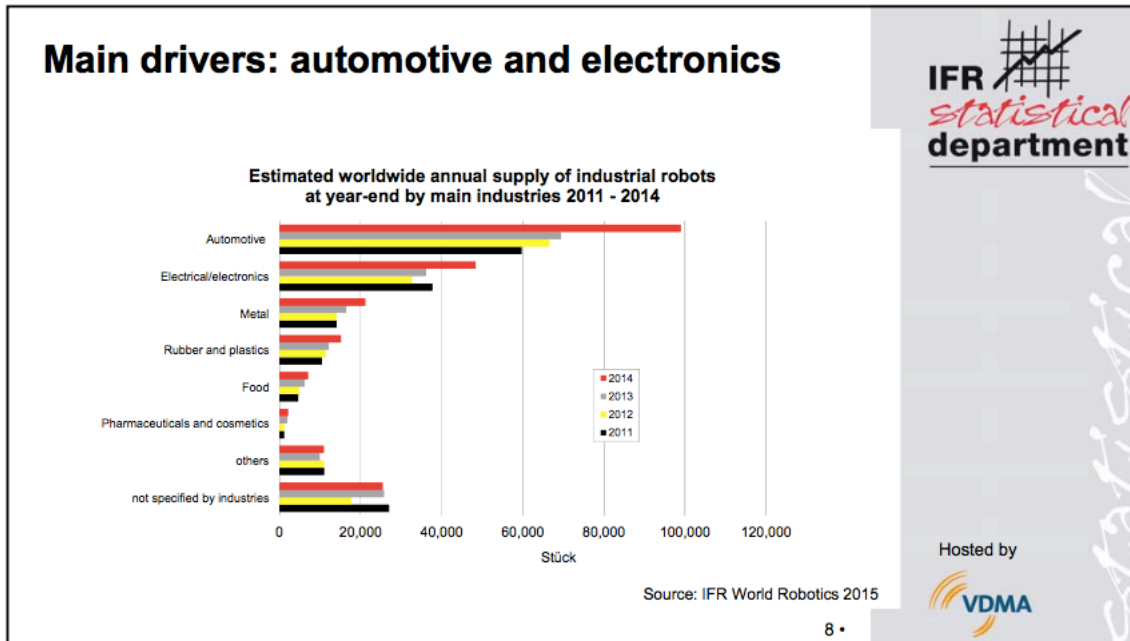
230.000 /2014

1,5 M /stock 2014

2,3 M /stock 2018

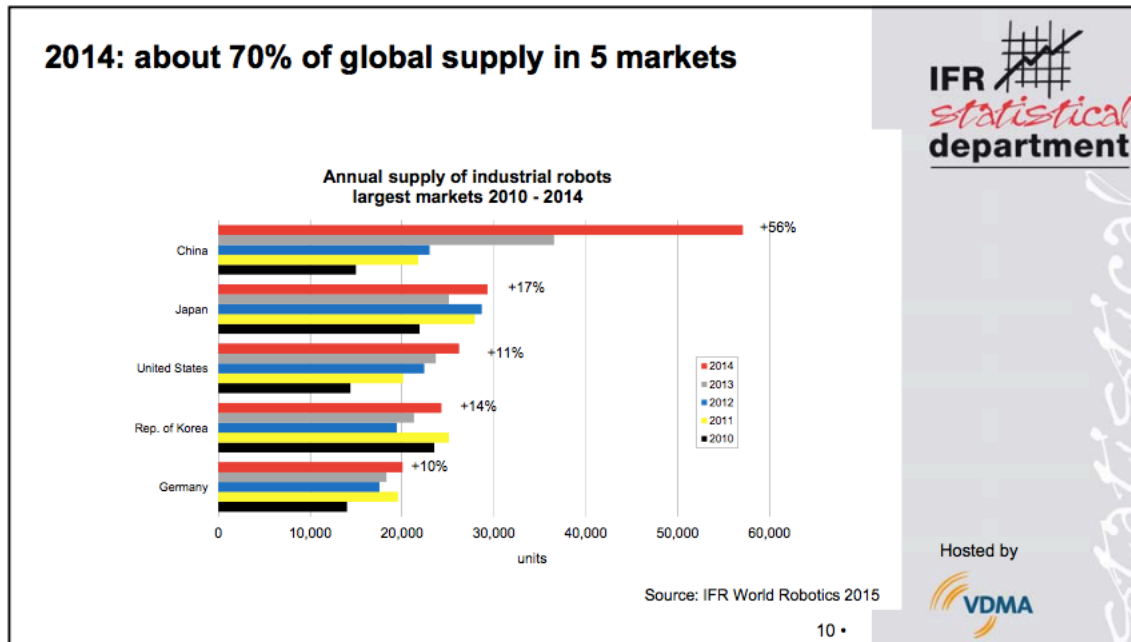
(+12% per year on average)

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Auto
45%

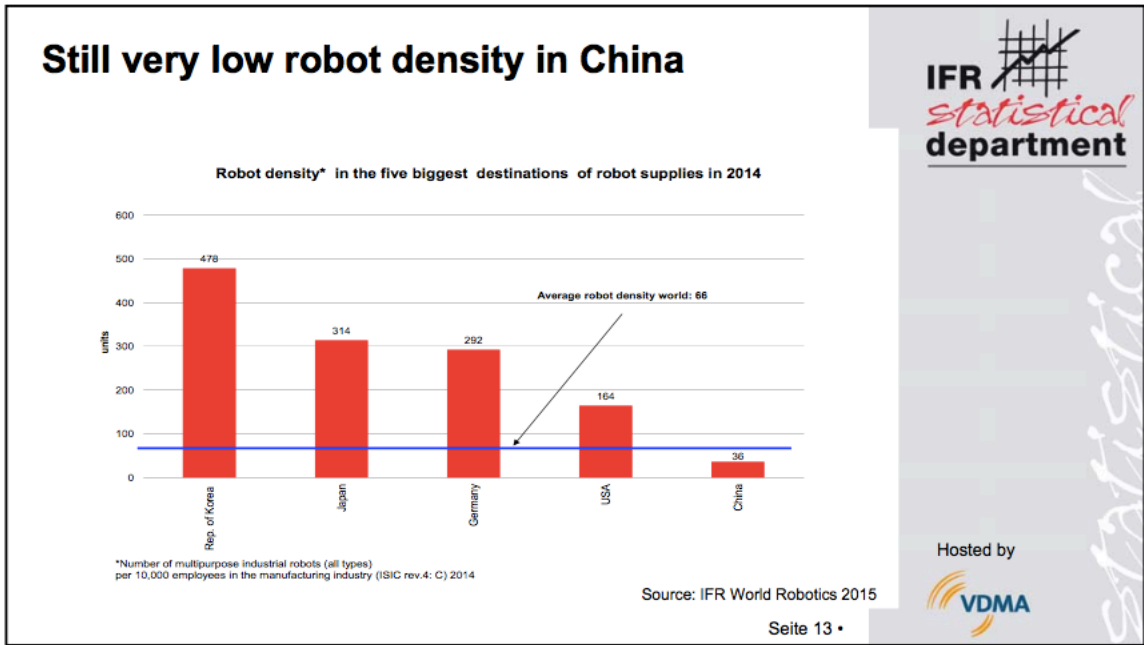
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3.700 /2015

33.000 /stock 2015

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World average robot density				
66 /10K				
US	SP	UK	China	
Sweden	150	60	36	
175				

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Main trends 2015-2018: Industry 4.0

- Robots will play an important role in the new era of manufacturing: Industry 4.0
- Manufacturing will be transformed
 - Communication is all around
 - Integration of machinery, warehousing systems and production facilities as Cyber-Physical Systems
 - Vast increase of flexibility, cost effectiveness and productivity in smart factories
 - Jobs in factories will change
 - workers will be freed from repetitive routine tasks, and
 - will focus on jobs that require judgment, common sense, creativity, problem-solving skills and dexterity.

Source: IFR World Robotics 2015

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Main trends 2015 and 2018

- **Breakthrough of human-robot collaboration**
 - industrial robots assist workers in a variety of tasks
 - improve manufacturing quality and processes
 - increase productivity
 - assist an aging workforce, e.g. in physically demanding tasks



Source: ABB

Source: IFR World Robotics 2015

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Main trends 2015 and 2018

- **Simplification of the use of robots**
 - essential for all industries to be able to sustain efficient and flexible manufacturing
 - High potential in small and medium sized companies
- **Mobile Robots**
 - support human-robot collaboration, and
 - flexible manufacturing
 - important tool for Industry 4.0

Source: IFR World Robotics 2015



Source: Universal Robots



Source: KUKA

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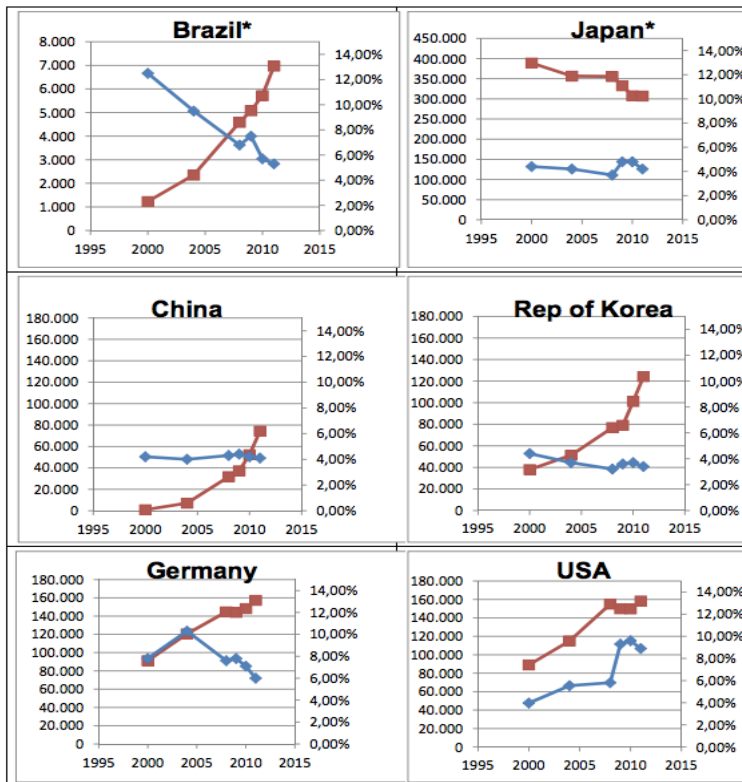
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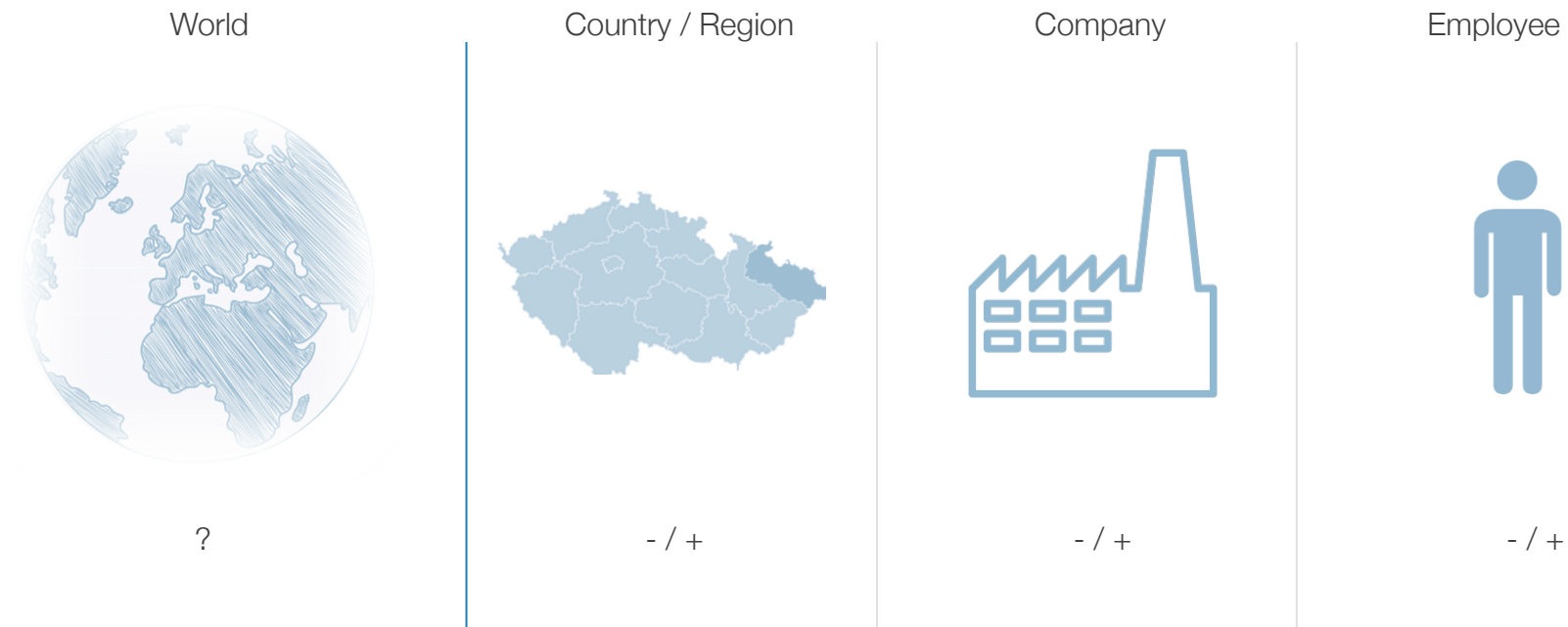
Rate of unemployment trend vs Numbers of robots in use.



◆ = UNEMPLOYMENT %
 ■ = Number of robots

Productividad	-
Competitividad	-
Introducción I4.0	-
Retención / Reubicación I4.0	+
Nuevas actividades industriales	+
Nuevas inversiones en servicios innovadores	+
<hr/>	
=	?

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