



Novas tecnologías

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O impacto da automação no trabalho



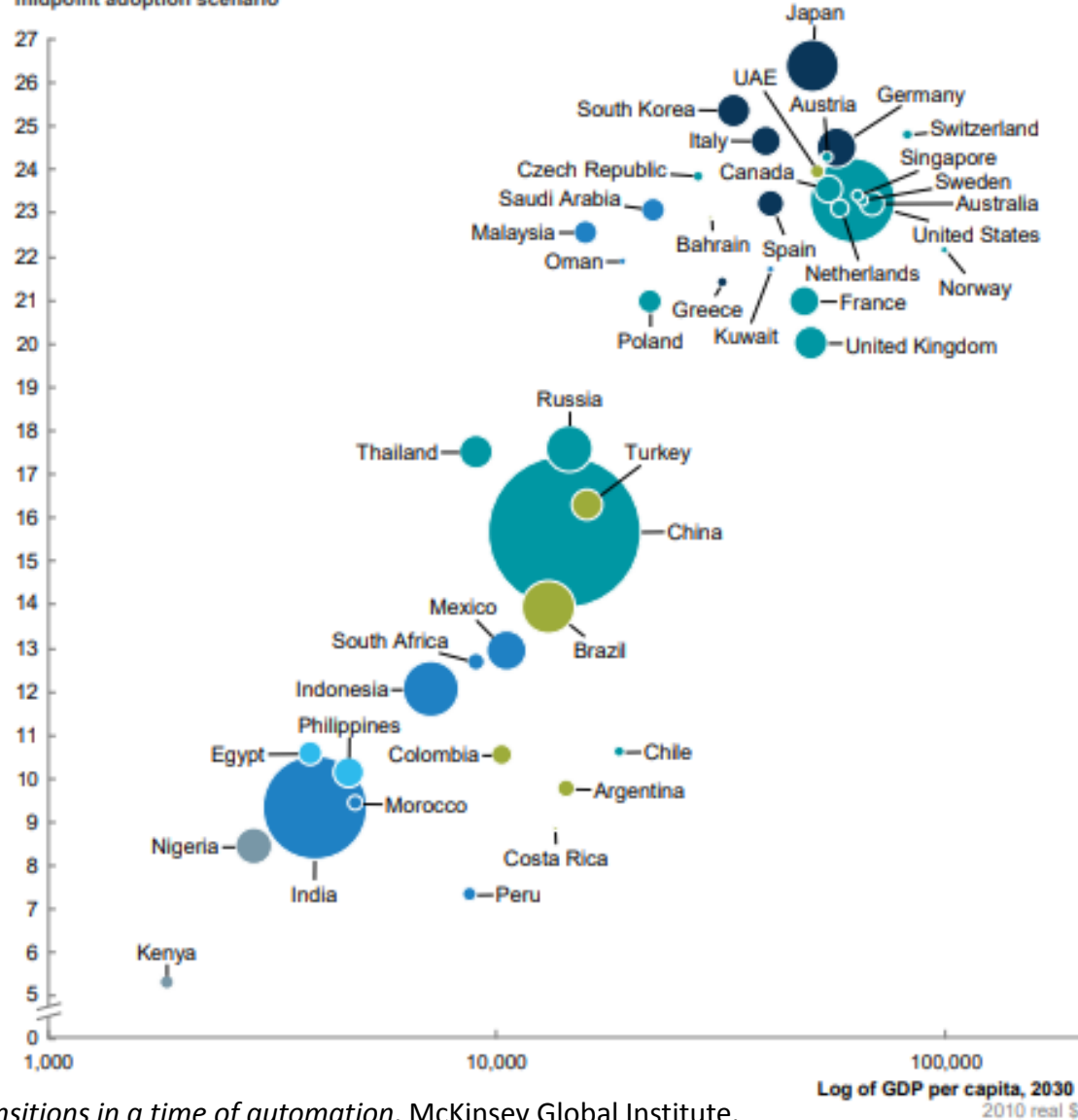
Fonte: *Jobs lost, Jobs gained: workforce transitions in a time of automation*. McKinsey Global Institute. Disponível em: <https://www.mckinsey.com/~media/mckinsey/featured%20insights/future%20of%20organizations/what%20the%20future%20of%20work%20will%20mean%20for%20jobs%20skills%20and%20wages/mgi-jobs-lost-jobs-gained-report-december-6-2017.ashx>

Impact of automation varies by a country's income level, demographics, and industry structure

Size = FTEs potentially displaced, 2030 (million) Color = Average age (projected), 2030

● <25	● 30-35	● 40-45
● 25-30	● 35-40	● 45-50

Percentage of current work activities displaced by automation, 2016-30, midpoint adoption scenario



E o Brasil?

Fonte: *Jobs lost, Jobs gained: workforce transitions in a time of automation*. McKinsey Global Institute.

O ritmo e a extensão da mudança

Five factors affecting pace and extent of adoption



Fonte: *Jobs lost, Jobs gained: workforce transitions in a time of automation*. McKinsey Global Institute.

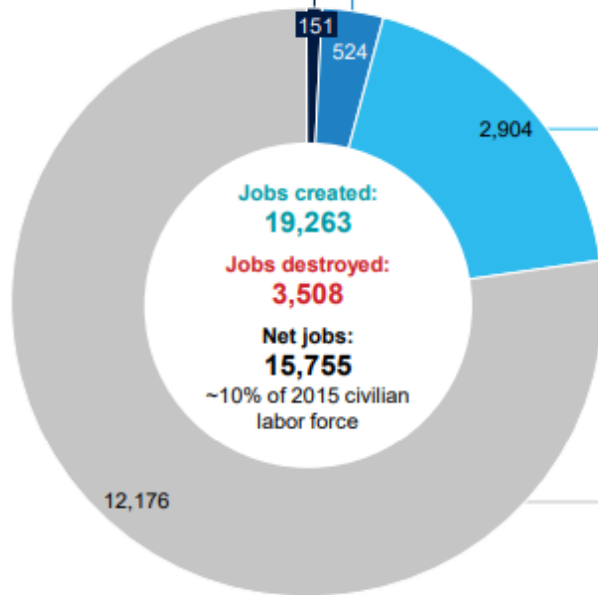
Technology drives the creation of many more jobs than it destroys over time, mainly outside the industry itself

Example: Personal computers

Total US jobs created and destroyed by personal computers (examples listed are not comprehensive)
 Thousand jobs

Direct Computer equipment manufacturing, 1970–2015	
▲ Assorted managers and administrators	31
▲ Computer software developers (in-industry equipment)	27
▲ Computer scientists	18
▼ Office machine manufacturers (typewriters)	-61

Indirect Computer suppliers, 1970–2015	
▲ Managers	42
▲ Semiconductor manufacturing occupations	31
▲ Printed circuit assembly occupations	26
▼ Typewriter indirect occupations	-79



Enabled Computer software and service industries, 1970–2015	
▲ Software developers (software and apps)	768
▲ Computer scientists	686
▲ Managers	416
▼ Typewriter repair	-32

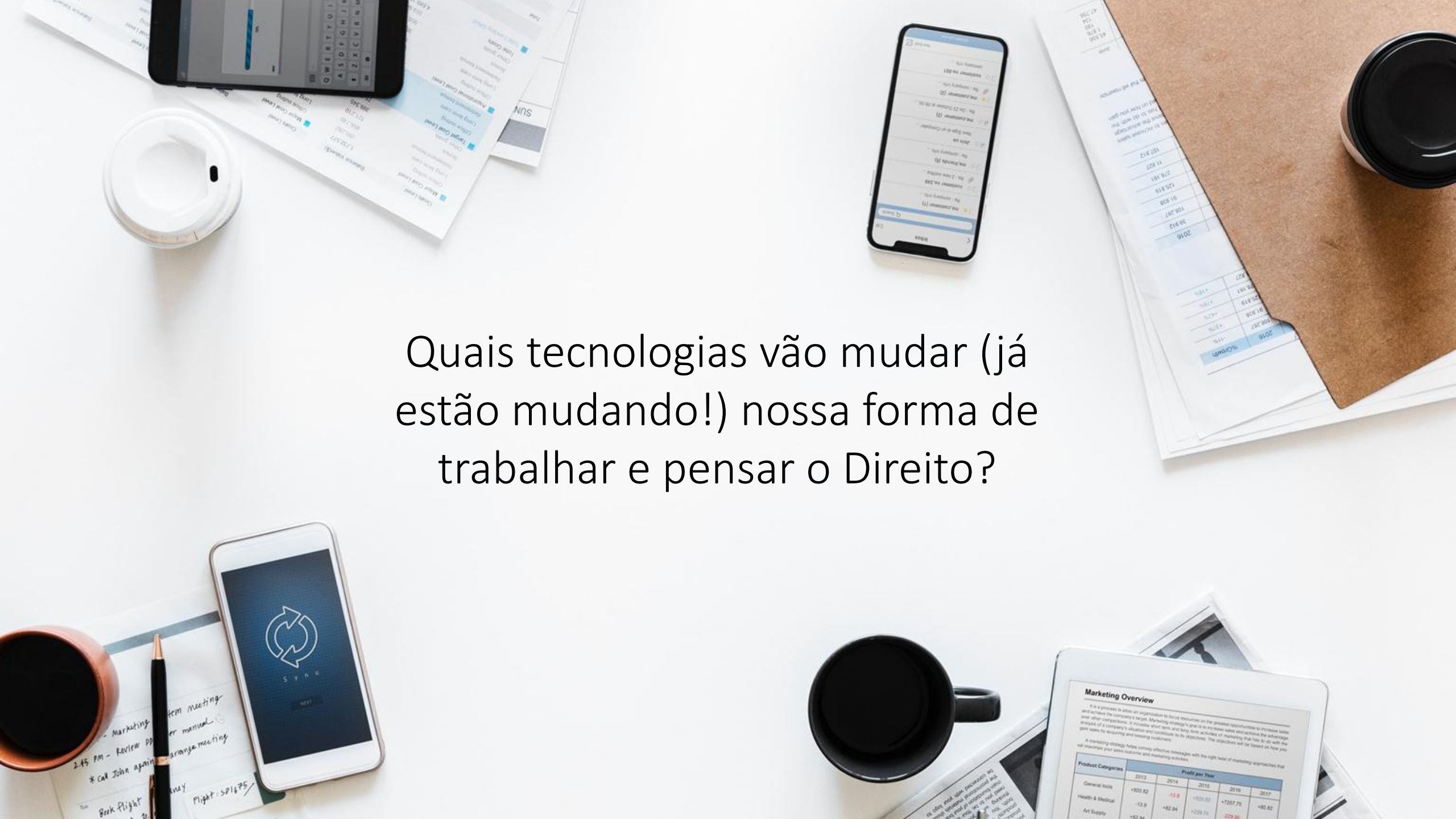
Utilizers Computer-utilizing industries, 1980–2015	
▲ Customer service reps	3,205
▲ Computer scientists (not in computer industry)	1,873
▲ Stock and inventory clerks	1,517
▼ Bookkeepers and auditing clerks	-881
▼ Secretaries	-823
▼ Typists	-562

SOURCE: IPUMS; Moody's; IMPLAN; US Bureau of Labor Statistics; FRED; McKinsey Global Institute analysis

A mesma história?

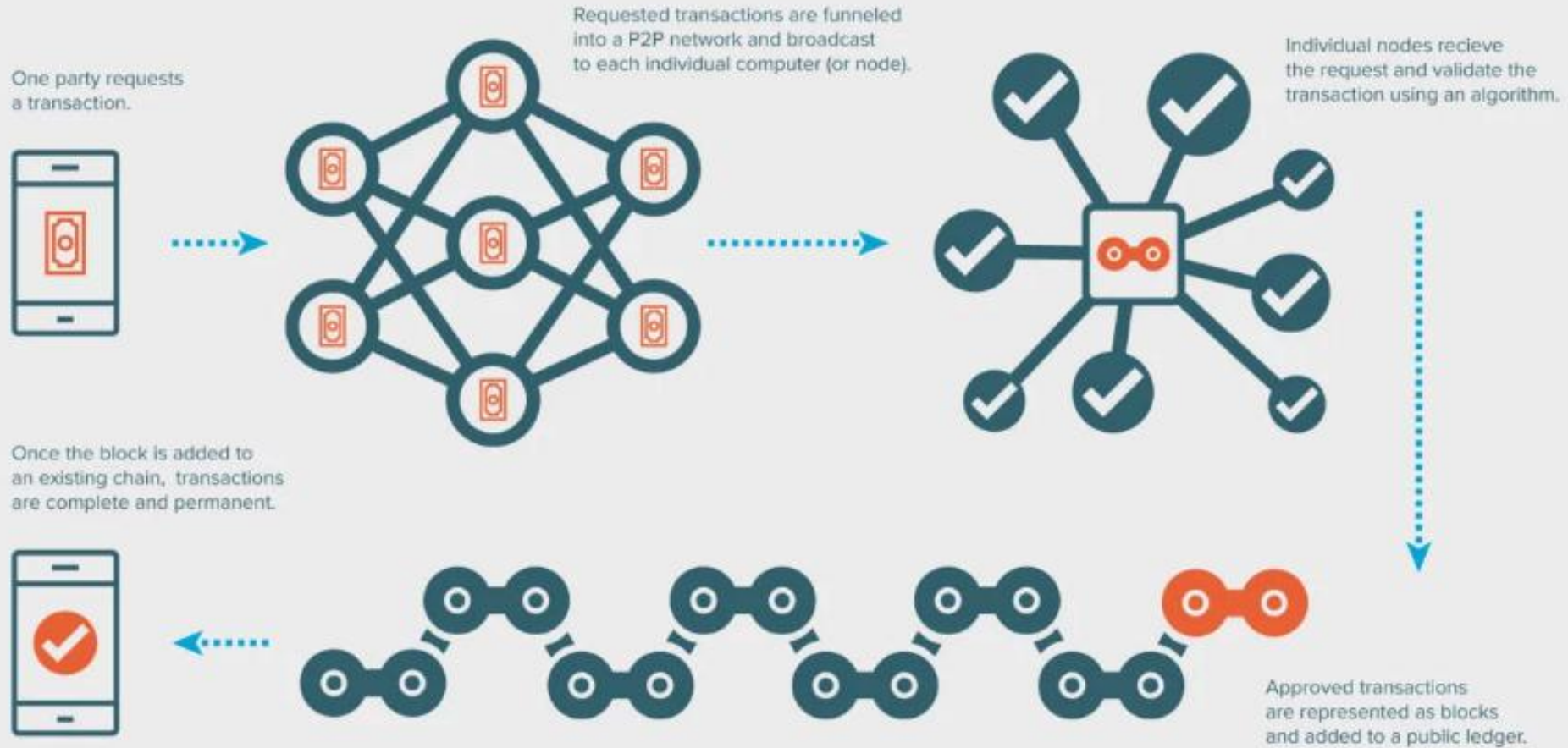
Fonte: *Jobs lost, Jobs gained: workforce transitions in a time of automation*. McKinsey Global Institute.

Quais tecnologias vão mudar (já estão mudando!) nossa forma de trabalhar e pensar o Direito?



Blockchain

HOW DOES BLOCKCHAIN WORK?

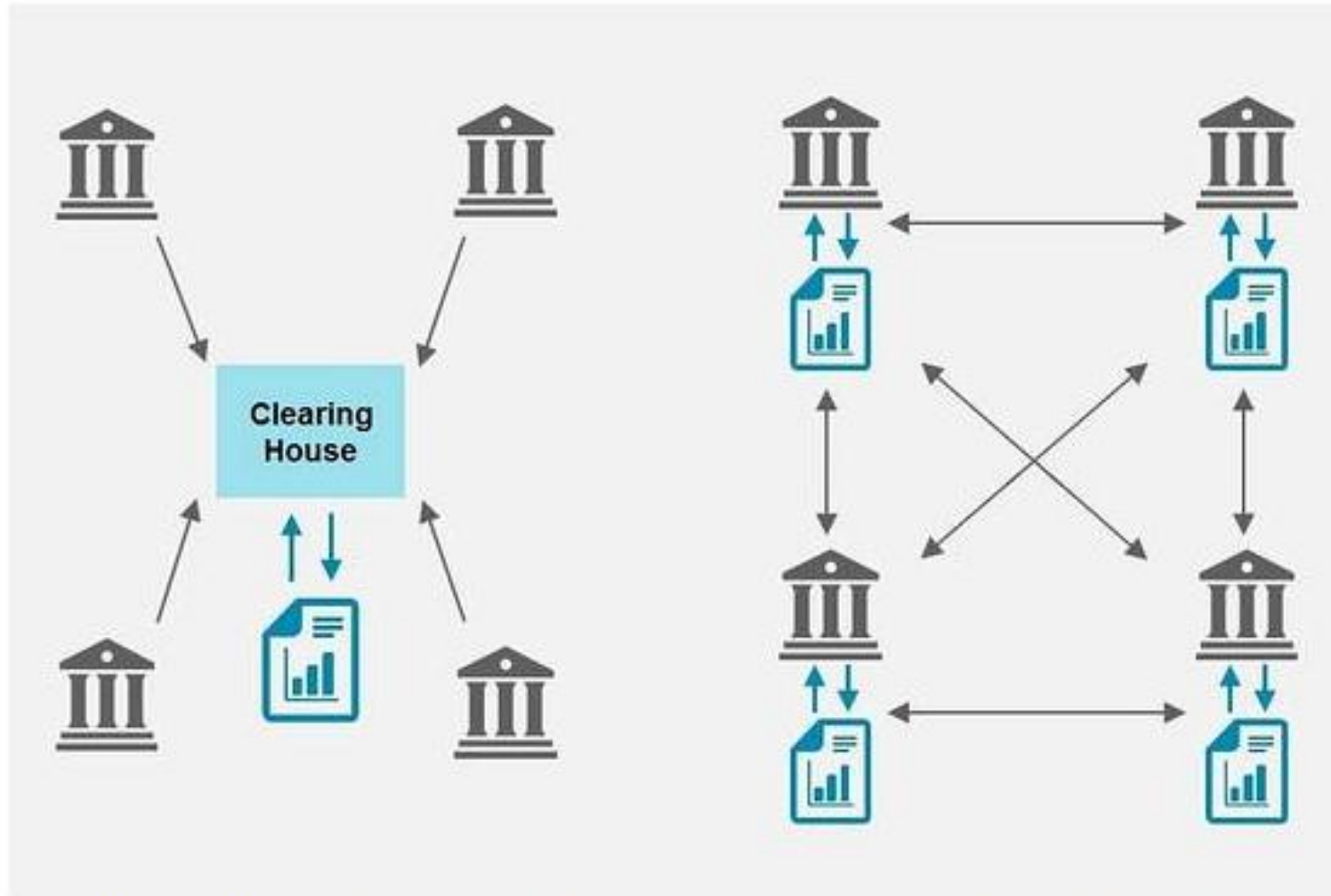


A “terceira parte” e a confiança



Figure 2-10: Crowley sending \$10,000 to Clarice through a traditional bank

Fonte: <https://www.coindesk.com/blockchain-lottery-miners-rewarded>



A distributed ledger, right, is a network that records ownership through a shared registry *OLIVER WYMAN*

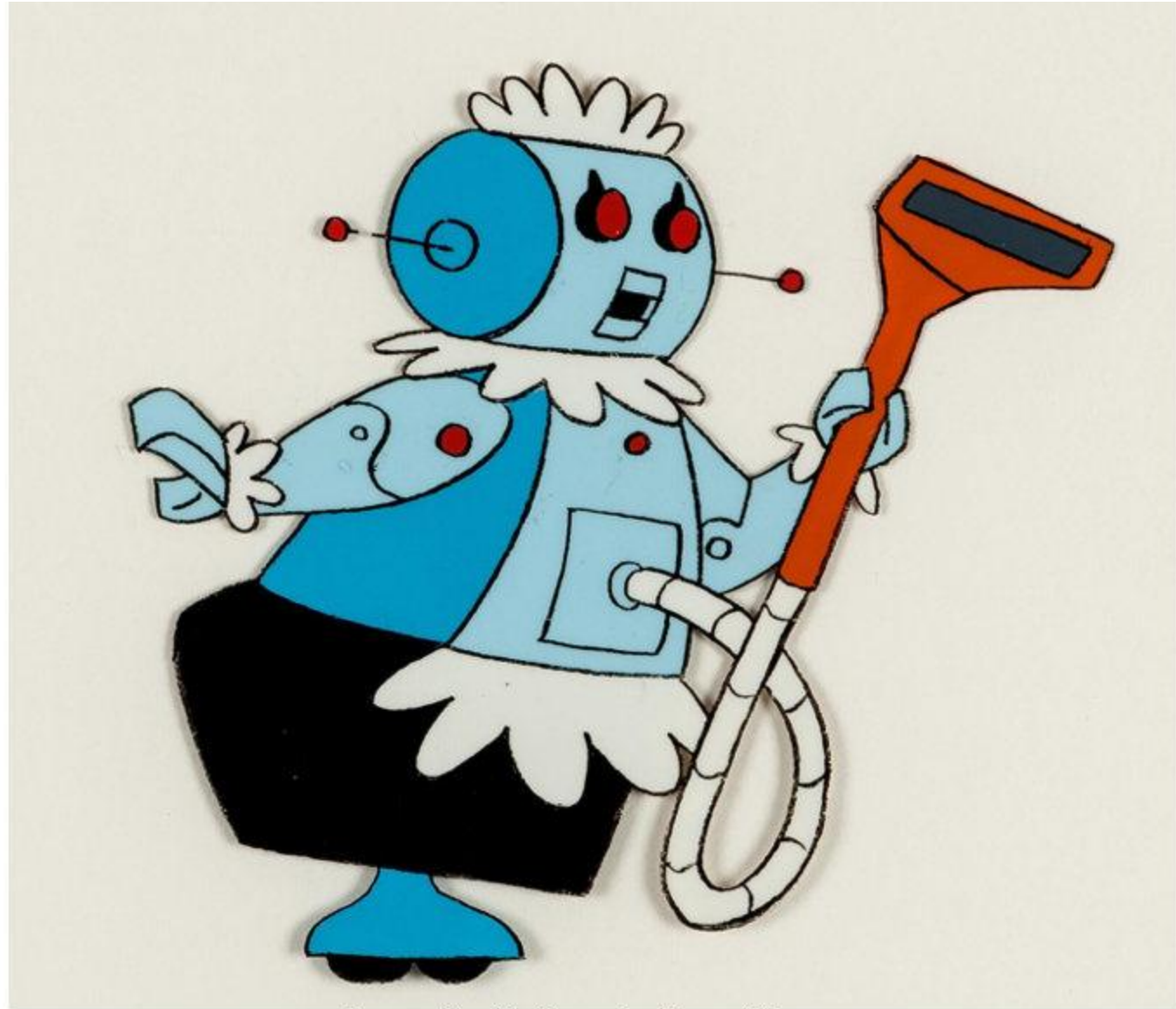
<https://blogs.wsj.com/cio/2016/02/02/cio-explainer-what-is-blockchain/>



*Exemplo: Bitcoin
(e outras
cryptomoedas)*

Inteligência Artificial (IA)

Machine Learning



Imaged by Heritage Auctions, HA.com



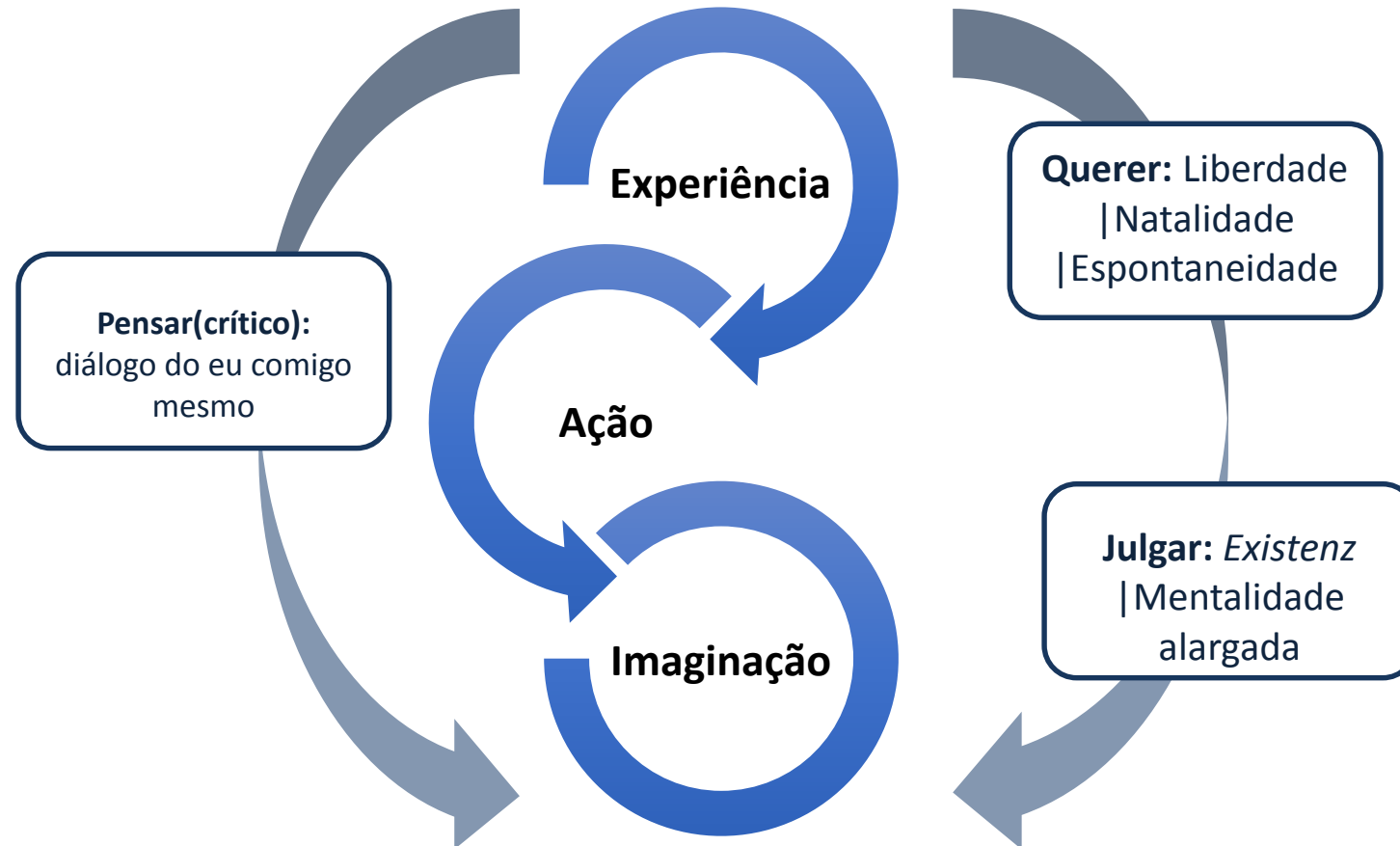
Como
programar para
ele aprender?



Como nós
aprendemos?

“A Vida da Mente”

A Vida da Mente | O *loop* cognitivo

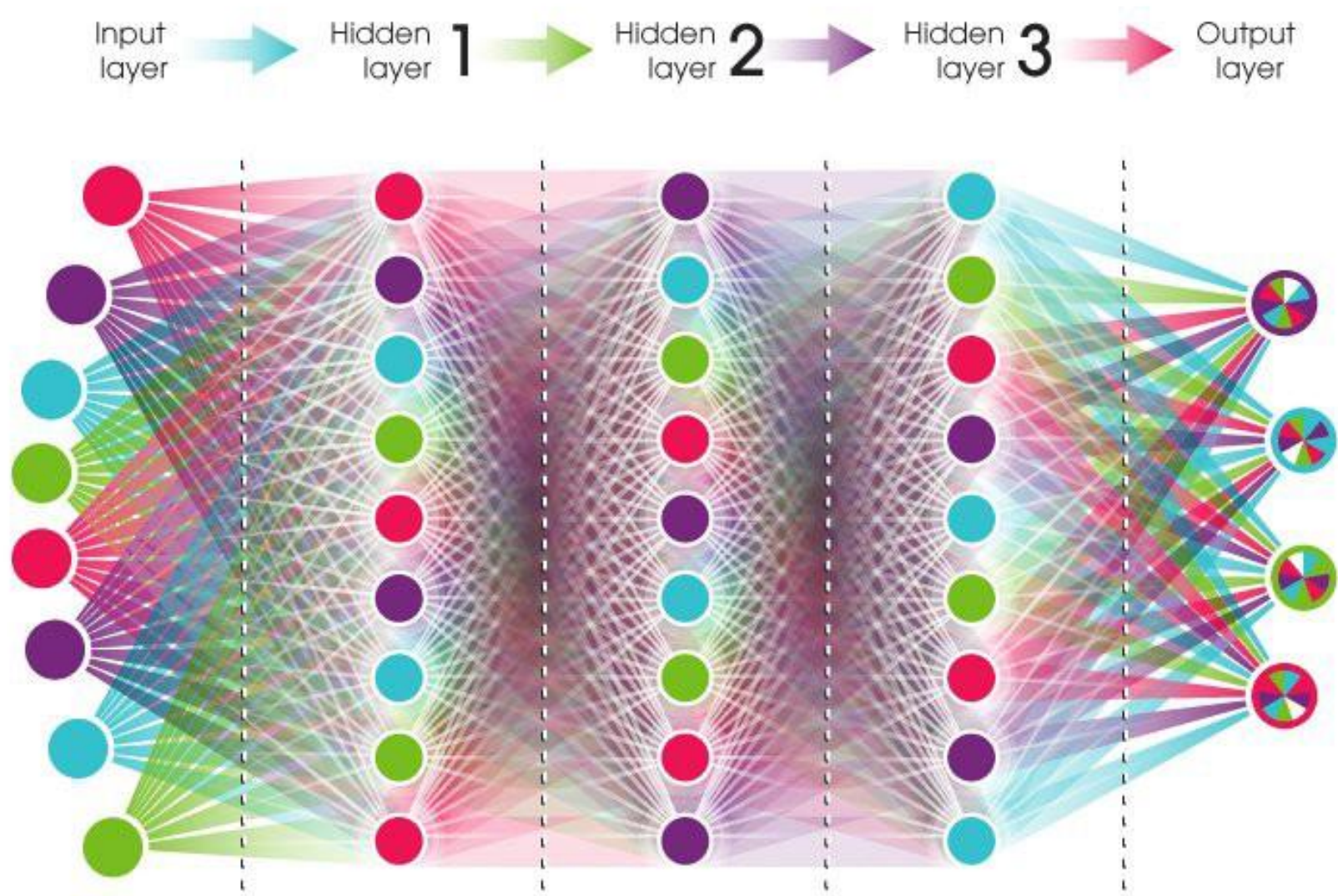


Estrutura:
Sintática

Dinâmica:
Existenz, loop

Conteúdo:
Semântico (interpretação e afetividade)

DEEP NEURAL NETWORK



neuralnetworksanddeeplearning.com - Michael Nielsen, Yoshua Bengio, Ian Goodfellow, and Aaron Courville, 2016.

<https://towardsdatascience.com/meet-artificial-neural-networks-ae5939b1dd3a?gi=39a54a394e97>

A integração com IA
A humanidade em nós

CODE OF ETHICAL BEHAVIOR



O que isso demanda dos trabalhadores?

Workforce transitions

Our scenarios for automation and labor demand highlight challenges for workers

SWITCHING OCCUPATIONS...

75M–375M

Number of people who may need to switch occupational categories by 2030, under our midpoint to rapid automation adoption scenarios

...DEMANDING NEW SKILLS...



...CHANGING EDUCATIONAL REQUIREMENTS

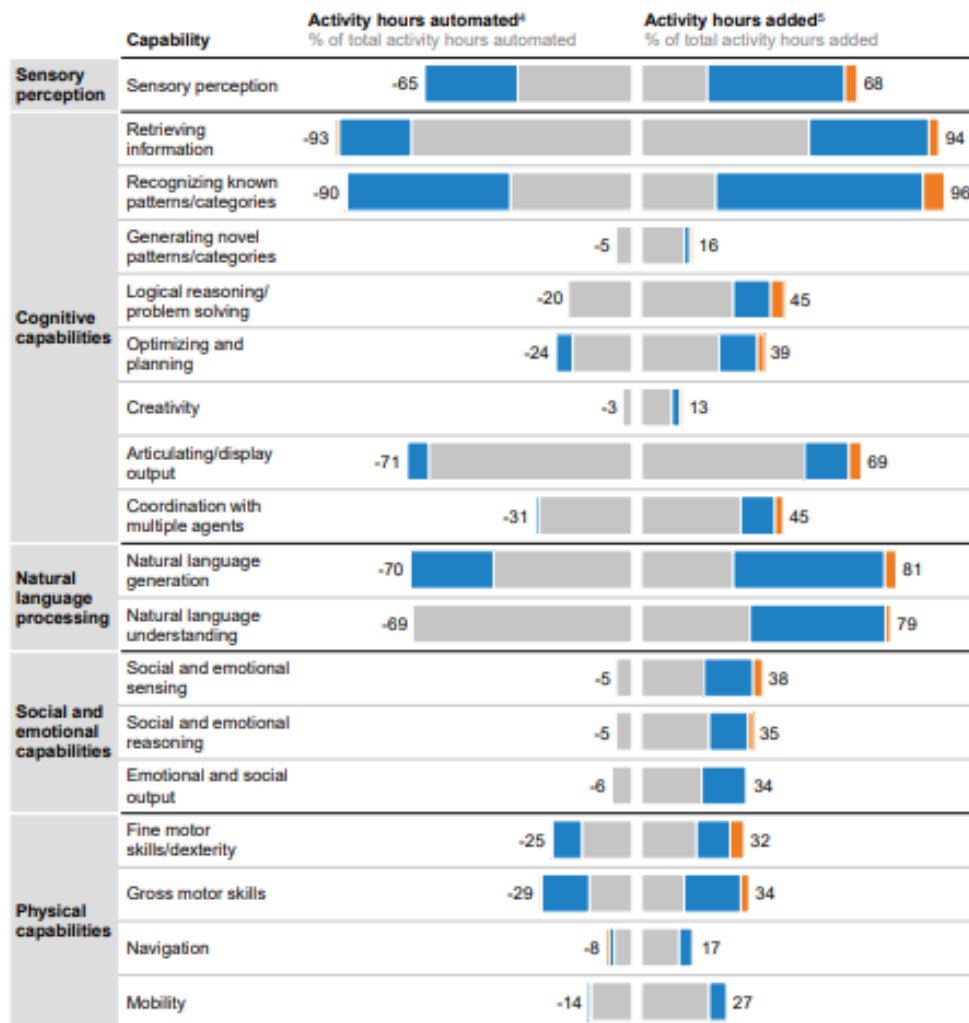


Fonte: *Jobs lost, Jobs gained: workforce transitions in a time of automation*. McKinsey Global Institute.

**Future work activities will require more social emotional, creative, and logical reasoning abilities—
and more advanced capabilities across the board**

Difference in share of work activity hours which require specified capability,
by level of expertise, between new work and displaced work, 2016–30
US example, midpoint automation, step-up scenario

■ Basic¹
■ Intermediate²
■ Advanced³



¹ Below-median capability required.

² Median human capability required.

³ At least 75th percentile capability required.

⁴ 80.3 billion activity hours automated (38.6 million jobs).

⁵ 68.3 billion activity hours added (31.9 million jobs).

NOTE: Some occupational data projected into 2016 baseline from latest available 2014 data.

Como podemos contribuir?...

- ✓ **Na Universidade:**
 - ✓ Como formar esses novos profissionais?
 - ✓ O que se deve ensinar?
- ✓ **Nos Tribunais:**
 - ✓ Como organizar a estrutura judicial?
 - ✓ Quais os papeis a serem desempenhados?
 - ✓ E a Justiça do Trabalho?

Muito obrigada! Até o próximo café!

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