Transforming work in the Digital Economy:

The impact of digital technologies on work innovation and worker engagement

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About the Project (1)

Digital Technologies

- Profound transformation of how we function in society
- Fundamental shifts in work
  - How
  - When
  - Where
  - For whom
  - With whom

https://hrexecutive.com/can-work-from-anywhere-improve-employee-productivity/

About the Project (2)

Digital Technologies

- Reframe the definition of employment
- Transform people's relationships with organizations
- Change the temporal and spatial geography of work
- Generate positive and negative effects on constitution and configuration of work

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About the Project (3)

Digital Technologies – Work innovation and worker engagement

- Apply topic modelling and qualitative content analysis to understand:
  - how digital technologies are transforming the nature of work;
  - how digital technologies are transforming workplace practices;
  - the effect of digital technologies on social networks and relationships in the workplace;
  - how and to what extent these new work arrangements affect employee engagement and the meaningfulness individuals find in the work they do;
  - the implications of digital technologies for the future of work.

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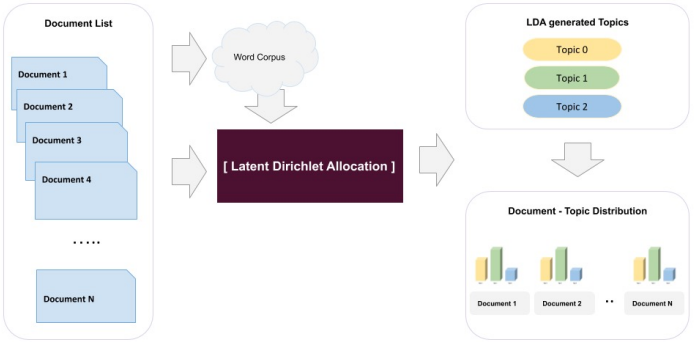
Methodology

Topic Modelling

- We used Orange 3.27.1 (a University of Ljubljana open source initiative) to run the Latent Dirichlet Allocation model on the documents collected from broad searches of the Web of Science Core Collection and Scopus.
- Title and author searches of keywords such as:
  - digital, technology, and innovation in combination with words such as work, worker, employment gig work, platform work, teleworking, telecommuting, work from home, and remote working
- 9865 articles from Web of Science and 4678 from Scopus.
- Further screening of title and abstract for the word *digital* yielded
  - 396 articles used for the topic modelling and 1414 articles used to validate the themes generated by the topic model.
- Qualitative content analysis of the articles supported the findings generated by the topic model.

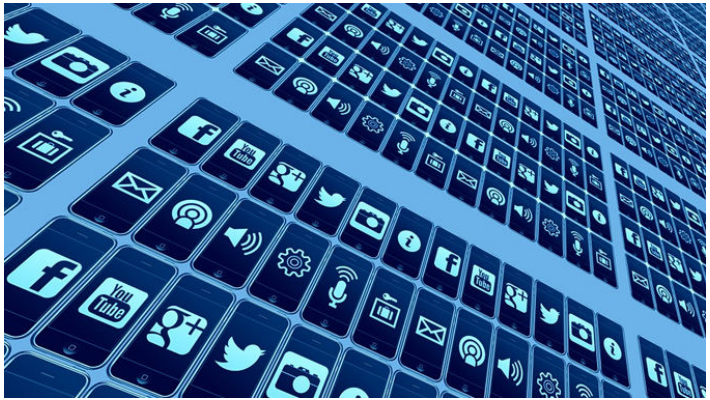


Rishu Shrivastava: https://anotherreeshu.wordpress.com/2020/06/11/topic-modelling-latent-dirichlet-allocation-an-introduction/

Findings

Five Themes – Platforms (1)

- ***Digital technology <u>platforms</u> and the changing nature of work.***
  - How, what, when, where, for, and with whom we work
  - Self-employment and time management autonomy through crowd-work and work-on-demand-systems
  - Complex algorithms to manage and control work demand and supply dynamics and monitor and evaluate performance.

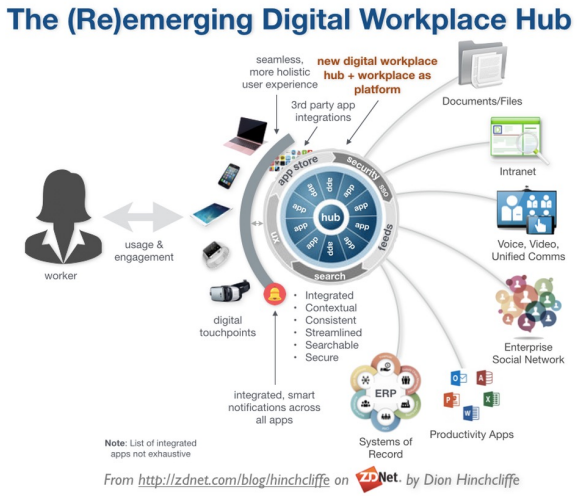


https://canadify.com/2016/10/25/more-canadians-turning-to-digital-platforms-for-entertainment/

Findings

Five Themes – Affordances and Practices (2)

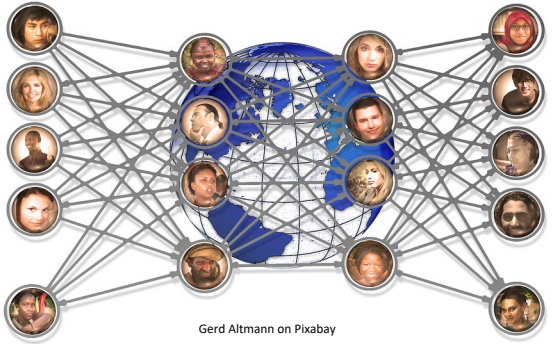
- ***Digital technological affordances are transforming workplace practices***
  - Organizing work and hiring workers
  - Communication and collaboration within and across organizations
  - Performing knowledge work
- Embedded in knowledge work practices
  - Support need for autonomy, mobility, and flexibility
  - Control of ambiguity and complexity



Findings

Five Themes – Social Networks and Relationships (3)

- ***No consistent conclusion regarding the impact of digitalization on the social structure at work***
  - Positive impact
    - On social relationships and networks
    - Enhance employee's power in the workplace social structure
  - Negative impact
    - On workplace power dynamics
    - Empower employers and employees at the same time
    - Advances employer power of surveillance
    - Enhance power of employees to respond to oversight



Gerd Altmann on Pixabay

Findings

Five Themes – Experiences, Consequences and Management (4)

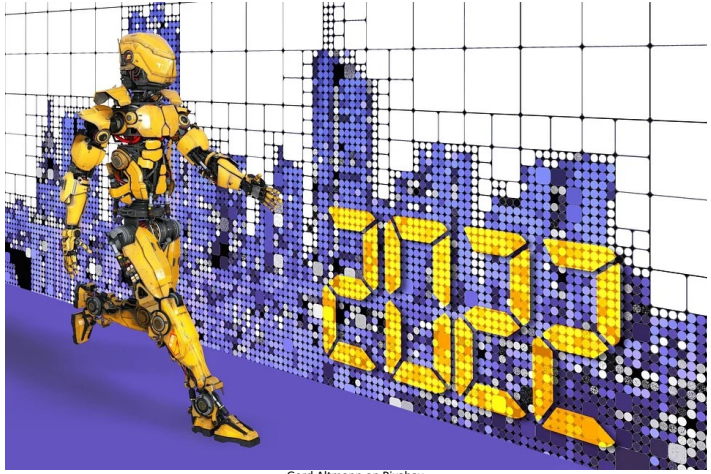
- ***Digital technologies can be both value-enhancing and value-destroying***
  - Impact workers behavioural and psychological outcomes
    - Information overload
    - Challenges with time management and worker productivity.
    - Higher cognitive and time resources needed
    - Work-life imbalance
    - Work stress
    - Techno-stress
    - Anxiety

Hatice Erol on Pixabay

Findings

Five Themes – Future of work (5)

- ***Industry 4.0 represents the digitalized workplace's future.***
  - Need for reskilling
  - Algorithmic control to platform control.
  - Adoption and use of artificial intelligence (AI)
  - Security and privacy issues continue to be problematic



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Policy Implications

Income inequality and precarious work

- Impacts of digital technologies on employment and the economy
- Identify and reduce gaps between those that benefit from applying the technologies and those that are marginalized

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Policy Implications

Broader socio-technical awareness of digital infrastructures and their impact on people

- Beyond algorithmic management to platform management
- Broader socio-technical awareness and understanding

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Policy Implications

Information and power asymmetry between employers and employees

- Workers need to develop their technological capabilities relevant to the digital economy to reduce knowledge and power gap
- Need for more investment in education and training to build digital skills

StartupStockPhotos on Pixabay

Policy Implications

Investment in lifelong learning

- More investment in lifelong learning
- Partnerships between businesses, government, and academia to improve digital knowledge accumulation

Jan Kosmowski on Pixabay

Policy Implications

Digital access and divide

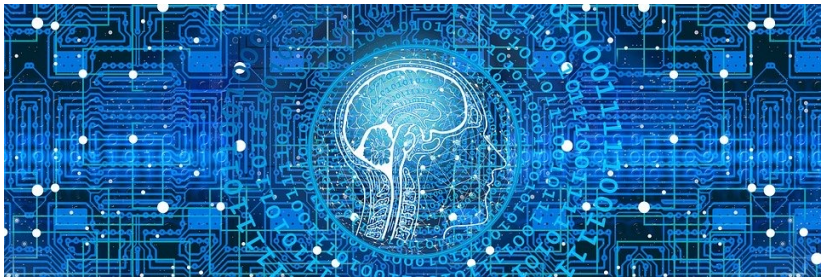
- Expand affordable and accessible digital infrastructures
- Reduce digital divide

https://www.smartcitiesworld.net/news/news/digital-divide-is-now-a-digital-chasm-1588

Policy Implications

Embracing and harnessing artificial intelligence

- Machine learning, deep learning, and robotics will radically affect jobs and work
- Need for organizational retooling



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Transforming work in the digital economy: The impact of digital technologies on work innovation and worker engagement is co-funded by the Social Sciences and Humanities Research Council and the Government of Canada's Future Skills program », «*Transformer le travail dans l'économie numérique : l'impact des technologies numériques sur l'innovation au travail et l'engagement des travailleurs* est cofinancé par le Conseil de recherches en sciences humaines et le programme Compétences futures du Gouvernement du Canada.

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