

# Designing for Humanity in the Age of Automation



UNIVERSITEIT VAN PRETORIA  
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Centre for the  
Future of Work

Sentrum vir die Toekoms van Werk  
Senthara ya Bokamoso bja Mošomo

Make today matter



**The cognitive economy** refers to an economic system where **value is primarily created through knowledge, ideas, and mental labour, rather than physical labour or manual tasks.** In simpler terms, it's an economy where **thinking, learning, and innovating** are the most important sources of productivity and growth.

# Key Features

**Knowledge-based work:** People use their **brainpower**, not just physical effort.

**Lifelong learning:** Because things change fast, people need to **keep learning** new skills to stay relevant.

**New forms of value:** Things like **creativity, innovation, and intellectual property** (not just physical goods) drive wealth.



**Technology-driven:** Digital tools, AI, and data are central. These help automate routine work so that humans focus more on tasks needing creativity and judgment.

**Emphasis on soft skills:** Critical thinking, communication, emotional intelligence, and problem-solving become just as important as technical skills.

**Job polarisation** refers to the growing divide in the labour market where **middle-skill jobs** are disappearing, while **low-skill** and **high-skill** jobs are increasing. This results in a **U-shaped employment pattern**: fewer jobs in the middle, and more at the top and bottom.

## Decline of Middle-Skill Jobs

Typically routine, structured roles that **used to pay decently**, such as:

- Bookkeepers
- Bank tellers
- Factory workers
- Clerks
- Retail supervisors

In the **cognitive economy**, such roles are often replaced by:

- **AI and algorithms** (e.g. accounting software, ATMs)
- **Offshoring** to cheaper labour markets
- **Robotic process automation** in manufacturing and admin tasks



This growing divide reflects a deeper design question:  
*Are we using automation to uplift human potential – or to hollow it out?*

To design **for humanity**, we must ensure technology complements human capability rather than amplifying inequality.

# Two Possible Futures

There are two possible futures for professions, both resting on technology:

1. Similar: A more efficient version of what we have today (professionals use technology to streamline and optimise their traditional ways of working)
2. Disruptive: Increasingly capable systems and machines, either operating alone or designed by people. In this scenario, technologies "substitute" for professionals.

While both futures will exist in parallel in the medium term, we expect the second future will eventually dominate. Through technological progress, we will find new and more efficient ways to solve important problems that traditionally only particular professionals could tackle.



# Moral Questions for Our Future

To what extent should AI use be permitted in your field - and where should we draw the ethical line (if at all)?



# Moral Questions for Our Future

## Tasks Machines Ought Not Perform?

- Are there uses of technology in the professions that we should prohibit? Courts use systems to assist judges in making parole decisions, but would we be comfortable with similar systems passing life sentences?
- Where should we set the moral limits to these technologies in the professions? This requires greater public debate and careful consideration of our values.



Cape Town crises !!



# Digital Ethics & Inclusion

Your company is hiring remote workers. Should you prioritise global talent (e.g., nomads in Cape Town) or local South African freelancers who need the work? How do you balance profit, fairness, and national development goals?

# Digital Ethics & Inclusion

fiverr

As a platform leader, how would you redesign your system to support equitable visibility for local talent?

- **Platform algorithms (e.g., Upwork, Fiverr) may rank South African talent lower due to geographic biases or unreliable internet metrics, while digital nomads get ranked higher despite being in the same physical space.**



# Fairwork South Africa: Platform Worker Conditions

# The Fairwork Project

Fairwork evaluates and ranks working conditions of digital platforms based on five principles that platforms should ensure to offer basic minimum standards of fairness: **Fair Pay, Fair Conditions, Fair Contracts, Fair Management, and Fair Representation.**



LSE



**THIS**



# Key Findings Overview

6/10

Mr D Food  
Highest-rated platform in South Africa

4/10

Home+  
Home maintenance platform with fair pay practices

6/10

SweepSouth  
Domestic work platform with strong performance

1/10

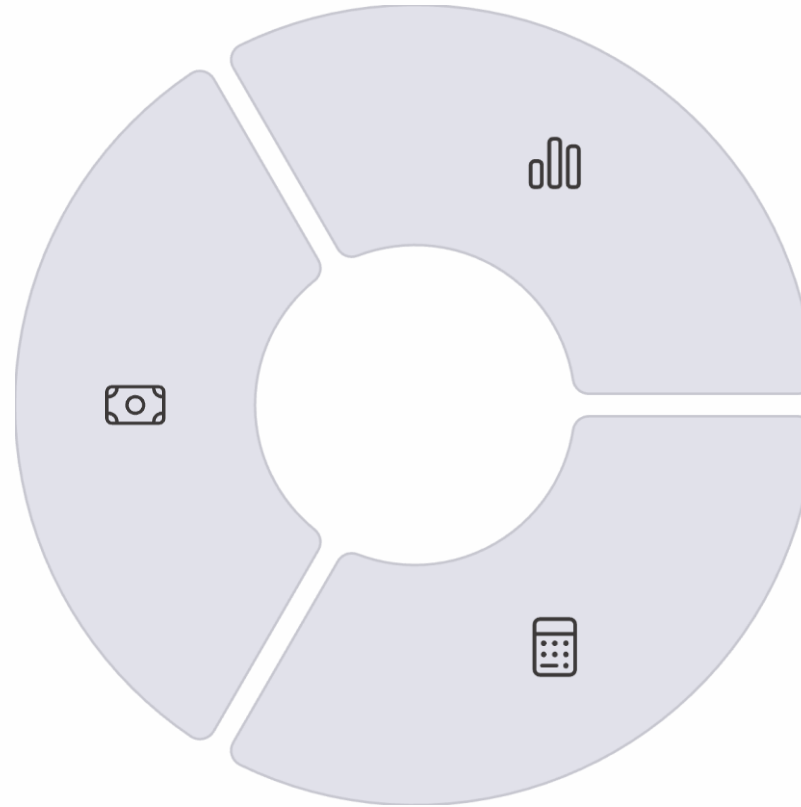
Uber & Uber Eats  
Lowest-rated platform in the assessment



# Fair Pay Assessment

## Minimum Wage

Only Home+ and SweepSouth ensured workers earn minimum wage (R25.42/hour) after costs.



## Living Wage

Only Home+ guaranteed living wage (R44.95/hour) after costs.

## Ride-hailing Concerns

Drivers uncertain about wage calculations and commission structures.

# Fair Conditions

## Safety Measures

Two platforms provided online safety training. Mr D Food and SweepSouth mitigated task-specific risks.

Mr D Food regularly shares safety tips and conducts awareness quizzes.



**1** Worker Concerns  
Most workers reported feeling unsafe due to customer threats and anti-social behavior.

**2** Women's Safety  
Female workers often decline after-hours work in certain neighborhoods, affecting their ratings.

# Worker Safety Concerns

## Ride-hailing Risks

Drivers face robbery, car hijacking, and violence. Tensions with traditional taxi industry create additional dangers.

## Domestic Worker Concerns

Workers feel unprotected in new customers' homes. Many report abusive behavior and unsafe task demands.

## Xenophobia

Foreign workers experience discrimination from customers and sometimes fellow workers.





# Pathways to Change

## Multi-stakeholder Dialogue

Create forums for workers, platforms, and regulators to address challenges together.

## Human-Centered Approach

Move beyond algorithmic management to consider worker safety and wellbeing.

## Policy Improvements

Implement mandatory social protections and insurance for platform workers.

There's nothing inevitable about poor working conditions in the platform economy. Better practices are possible.



# The Reality of AI Management



## Automated Management Systems

For healthcare workers, algorithmic software approves shifts, notifies facilities and workers, manages clock-in/out, and processes payments - all without human oversight.



## Isolated Workers

Elderly care workers face automated scheduling, GPS monitoring, and push notifications if they're too far from clients. Many platforms have eliminated phone numbers and email addresses for support.



## AI Chatbots as Managers

For ride-hailing and delivery workers, AI-generated chatbots handle most management functions, from pay disputes to emergency support, leaving workers stranded in already isolated workplaces.

# Worker Stories

- 1 Crystal, a nursing assistant in New York, uses ShiftMed for supplemental income. While she appreciates the convenience and wages, she worries about the lack of supervision: "Ideally, there should be a nursing supervisor that should check you in... It's not very often that I'm even in the building with a manager."
- 2 Aisha, a nursing assistant in Georgia, was surprised by the isolation working for ShiftKey: "You really have no one to talk to if you're needing help... There's no one for you to complain to if there's any mistreatment or abuse there. You really don't know the chain of command."
- 3 Kristin, a nursing assistant in Oregon who works for Clipboard Health, once developed appendicitis while moving a patient: "I was on the floor in tears and throwing up from just the pain. And I could not get a hold of anybody... I couldn't get approval to leave. And the paramedics left without me."

**What lessons can we learn from these “worker stories” ?**

# The Digital Gender Divide

Digital inclusion ensures that the benefits of the Internet and digital technologies are available to everyone. However, significant gender gaps persist in access and meaningful connectivity.

**234M**  
Gender Gap

234 million fewer women than men access mobile internet in low- and middle-income countries.

**58%**  
Mobile Internet

Only 58% of women in low- and middle-income countries use mobile internet.

**52%**  
LDC Gap

In least developed countries, men are 52% more likely to use the Internet than women.

# Gender and work-life balance

- The ability to work from home **affects parents and childfree people differently.**
- A study in Sweden uncovered the fact that **having children in the home amplified the perception of the home as a more stressful environment** (Hartig et al., 2007).
- This perception was **more pronounced in female employees.**

# Design determines who thrives in the automated future.

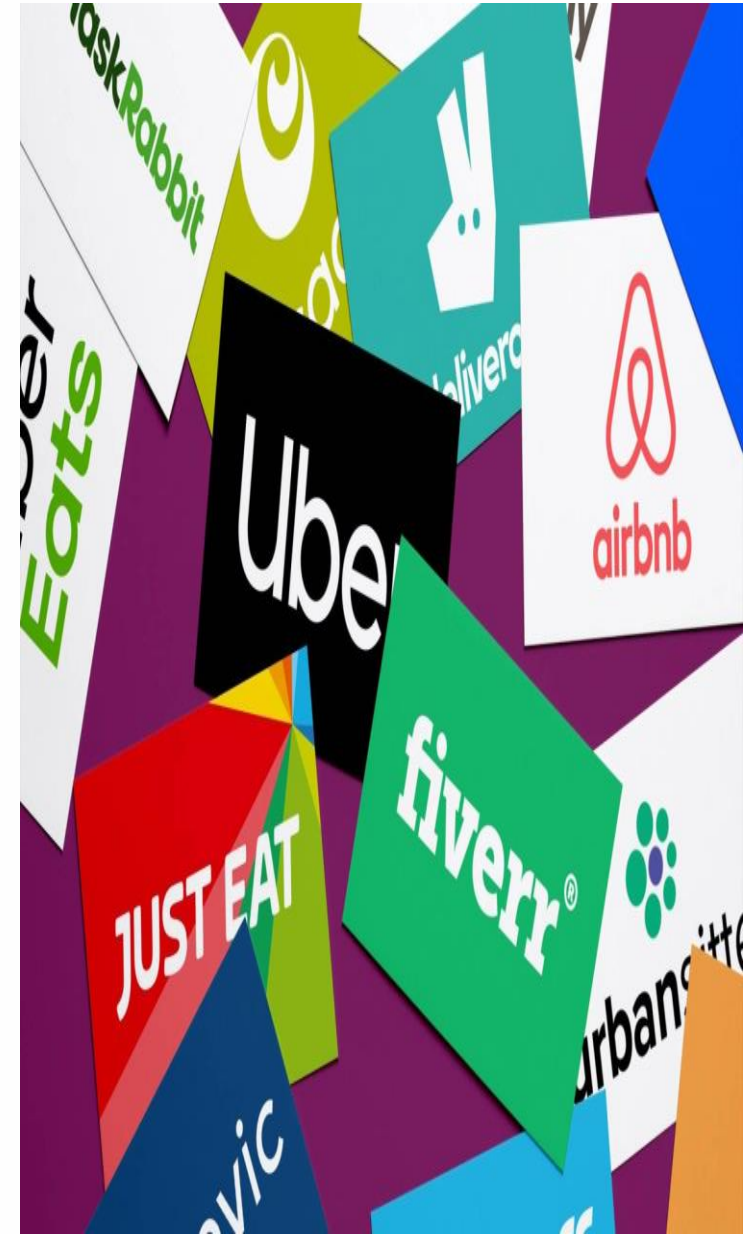
## Platform Work Design – Who Gets Visibility and Fair Pay

Platforms such as **Mr D Food, SweepSouth, and Uber** illustrate how algorithmic design directly shapes worker livelihoods.

**Algorithmic bias:** Rating systems and automated scheduling favour workers with faster internet, newer devices, or fewer caregiving duties – often disadvantaging women and migrants.

**Design for fairness:** When platforms build transparent pay systems, local language interfaces, and human appeals processes (as in parts of SweepSouth's model), workers experience dignity and empowerment.

→ *The platform's design determines whether gig workers survive or thrive.*



# Design determines who thrives in the automated future.

## Education and Skills Design – Who Becomes Employable

Automation-ready education depends on **curriculum design**.

Universities that integrate **digital fluency, entrepreneurship, and ethics** prepare graduates for adaptive, creative roles.

By contrast, traditional rote-based training systems risk producing graduates for jobs already disappearing.

→ *The design of the education system determine whether youth enter the future workforce as innovators or as bystanders.*



The Gig Economy and Covid-19:

*Fairwork Report on Platform Policies*

April 2020



The *Fairwork* Project

[www.fair.work](http://www.fair.work)  
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[@TowardsFairWork](https://twitter.com/TowardsFairWork)

# Design determines who thrives in the automated future.

## Financial Inclusion – Who Accesses the Digital Economy

Fintech innovations like **TymeBank**, **Capitec**, and **Mukuru** demonstrate that design choices can democratise finance (**M-Pesa**).

**User-friendly mobile platforms** and **low-data interfaces** make banking accessible to informal workers.

But when design ignores the realities of digital literacy or connectivity costs, millions remain excluded from the formal economy.

→ *The design of digital financial systems determines who participates in – or is excluded from – economic growth.*



# Design determines who thrives in the automated future.



## Policy and Infrastructure Design – Who Gains Access

Automation thrives where there is **reliable connectivity, affordable data, and digital policy coherence.**

Poorly designed infrastructure rollouts deepen the urban–rural digital divide.

Thoughtful policy design – such as the

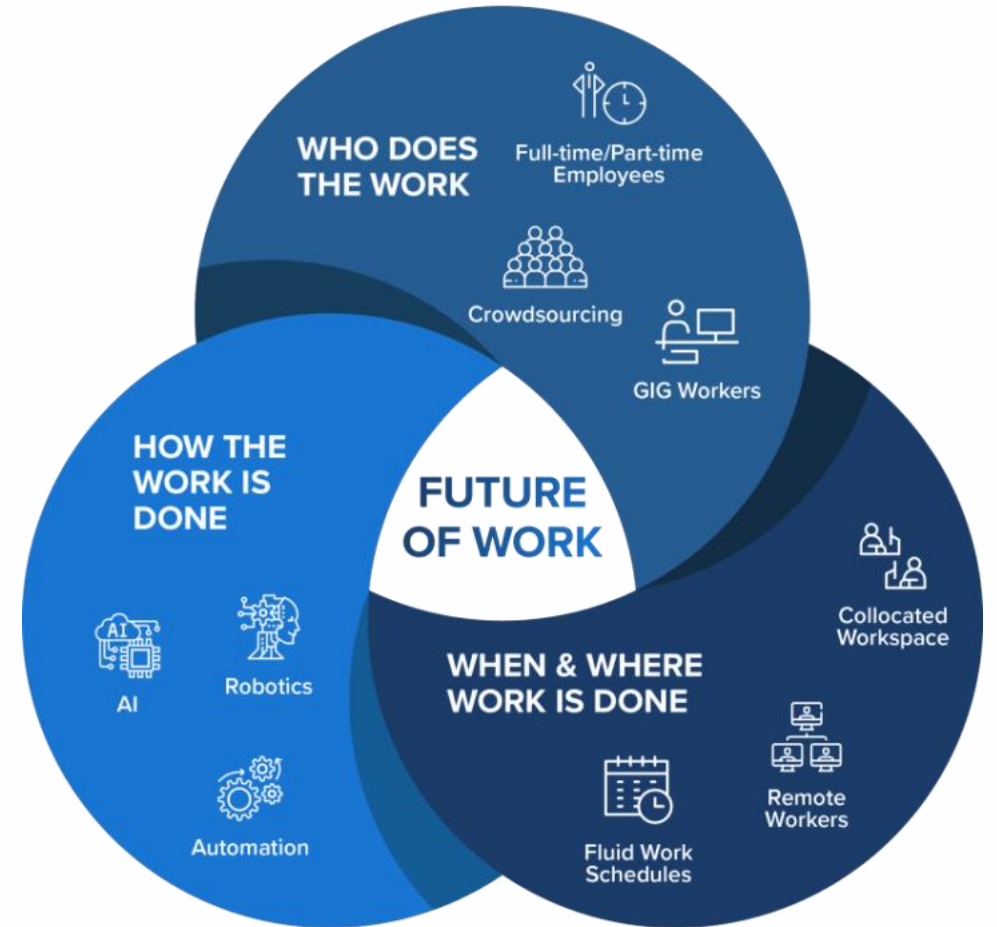
### **National Digital and Future Skills**

**Strategy (2021–2025)** – recognises that human capital development must accompany technological adoption.

→ *The design of national systems determines whether automation creates opportunity or inequality.*

In South Africa, automation will not decide who wins — **design will.**

The way we design platforms, education, technology, and policy will determine whether automation **reproduces inequality** or **builds a more human, inclusive digital future.**





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Thank You