POWER AND PROGRESS
Our 1000-Year Struggle Over Technology & Prosperity

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In the age of breathtaking advances in Artificial Intelligence...

Who controls the future?
Who benefits?

With advances in “machine intelligence,” we must consider how new technologies will serve society.

Will generative AI serve only a technological elite or underpin broad-based prosperity?
We have been here before: Visionaries and hubris

Ferdinand de Lesseps was lauded for his great success, the Suez Canal.

Expecting similar success, he pushed his vision for a new canal in Panama, with catastrophic consequences.
The productivity bandwagon: do workers benefit?

Medieval breakthrough: windmills
Aristocracy and clergy benefited; peasants were forced laborers

Eli Whitney’s cotton gin, 1794
Enslavers benefited; slavery intensified in the deep South
In the nineteenth century, power looms automated the work of hand-weavers.

Working conditions worsened, wages were low, and surveillance was intense.

Automation displaced workers, and without the creation of new tasks for them, the productivity bandwagon ground to a halt.

“No man would like to work in a power-loom...there is such a clattering and noise it would almost make some men mad...to be subject to a discipline that a hand-loom weaver can never...”
The Industrial Revolution: Worker monitoring and worsening health

Surveillance technologies, inspired by the panopticon, enabled capital to squeeze labor. As cities grew, disease and squalor abounded.

Worker monitoring: Jeremy Bentham’s panopticon, 1791

City squalor: growth of industry worsened health, 1858
Modern times are different… right?

Shared growth and prosperity following WWII, but a growing divergence over the past 40 years

The change in real (log) weekly earnings, since 1963
Working age adults, ages 18–64

The rise in inequality is not just a US phenomenon.

Change in the Gini Coefficient, measure of inequality
1985–2010’s

When does the “productivity bandwagon” deliver shared prosperity?

New tasks and worker power

Lessons from the U.S. automobile manufacturing industry:

I. Electrification and the modern factory dramatically boosted marginal worker productivity

II. Labor organizations became stronger, bolstering sharing of productivity gains and worker voice
Why did things go wrong in the digital age?

1a  Too much focus on automation, not enough on creating new tasks
Why did things go wrong in the digital age?

Consequences of automation for wages and inequality

Change in real wages due to automation of job tasks 1980–2016

Why did things go wrong in the digital age?

2 New corporate visions and erosion of worker power

“The social responsibility of business is to increase its profits”

–Milton Friedman, 1970
Can the age of AI be different?

The previous orthodoxy aimed for “machine intelligence”;

It is much better to focus on “machine usefulness”

The Turing Test: Can a computer convincingly imitate a human?
Consequences of fixation on “machine intelligence”?

Self-checkout kiosks transfer work to customers, but do not improve productivity; this is “so-so automation”
Will “generative AI” reverse these long-term trends of widened inequality, weakened worker power, and low productivity growth?

We asked ChatGPT for its opinion. It offered this explanation:

“Perhaps, but probably not...it’s not a magic solution...if generative AI is used to replace workers instead of support them, it could have negative consequences for employment and the economy.”
Surveillance is also intensifying

Similar trends in both authoritarian and democratic countries

Centralized control of data does not augur well for the future of democracy
Implications for the emerging world

Inappropriateness of AI:
Robotics and AI are changing the global division of labor and could displace workers, 2005-2015

The growth in “routine” versus “nonroutine” jobs
Percentage point differences

Manufacturing

Services

Own calculations with data from Asian Development Bank.
What can we do?

*Change the narrative away from the hubris of techno-optimism*

Sam Altman (OpenAI) and Elon Musk
What can we do?

*Create countervailing powers*

- Labor movement
- Bottom-up organizations from civil society
- Implementing appropriate regulation (e.g., taxes, antitrust, data, support worker-friendly technologies)
What can we do?

Redirect technological change to enhance human capabilities:

- New tasks for greater worker marginal productivity
- Better information for workers and human decision-makers
- Greater worker autonomy
- Empowering citizens

“...The public does not have to take what’s being dished out...

COMPUTER POWER TO THE PEOPLE!

DOWN WITH CYBERCRUD!”

Ted Nelson: technological pioneer, 1974
Can we actually redirect technology?

Yes, investment in the right technologies can be achieved by societal mobilization and government policy.

Cost of generating renewable electricity 1980’s–2021, various utility-scale sources