HIGHER EDUCATION IN THE 21ST CENTURY

looking backwards looking forwards

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What we see around us…….

violent poverty/growing inequality/stagnant economy/unemployment

erosion of democracy

slide towards anti-intellectualism

the degradation of ethical society

escalation of political violence/construction of 'the other'

massive global migrations

public health challenges

rapid changes in the world of work

Need Disruptive Interventions

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universities can’t solve these problems by themselves, but……..

universities can’t sit on the sidelines either……

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…….because universities are social institutions

- produce, apply, disseminate knowledge
- involved in undergraduate and postgraduate education
- that are natural bridges between societies – they cross boundaries and allow for the free flow of people, ideas, etc.
- places where there can be theorising and experimentation with new approaches, new solutions, new technologies.

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CATALYSING YOUTH EMPOWERMENT FOR THE FOURTH INDUSTRIAL REVOLUTION

Four major historical eras defined by the way we work:

- The Hunter-Gatherer Age lasted several hundred thousands of years.
- The Agricultural Age lasted several thousand years.
- The Industrial Age lasted a couple of centuries.
- The Information Age has lasted just a few decades.

And now today: The Augmented Age.

Natural human capabilities are augmented by computational systems that help you think, robotic systems that help you make, and a digital nervous system that connects you to the world far beyond your natural senses

Michael Conti

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Klaus Schwab – founder of World Economic Forum (2016)

"We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before. We do not yet know just how it will unfold, but one thing is clear: the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academia and civil society."

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Why is there so much of focus on this change?

Velocity – exponential

Scope – disrupting all industries

Systems Impact – transformation of entire systems

Human-Technology Infusions

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CATALYSING YOUTH EMPOWERMENT FOR THE FOURTH INDUSTRIAL REVOLUTION

Catalysing Youth Empowerment and the Idea of the University?

Role of universities

in building more equal societies
as social institutions – renewing humanity
in shaping the way in which societies engage future

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purposes of higher education – public goods

Creating active citizens
Meeting the needs of the economy
Producing new knowledge
Creating the artist
Generating social mobility
Nation building

Building new cohorts of intellectuals

Critical thinking/Building skepticism
Systemic thinking
Problem solving
Working in diverse teams
Ethical reasoning
Effective communicating
Innovating

Renewing Humanity

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NUST's Opportunities

Be truly national and international university

Access and Success – data analytics

Designing curricula that address

- the overall development of our students – Gen Ed?
- a culture of innovation and entrepreneurship
- the human-earth nexus

Preparing students and society for the Augmented Age – a new era of digital technology–human interfaces

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NUST's role in building a national intellectual culture

Particular dangers for societies like ours

Deepen inequality

Likely that the Gini Coefficient will simply grow unless countervailing steps are taken

Impact on Labour Market

Impact on Education

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What steps can we take?

What can happen?

Talent versus Capital - already happening

Job market could be deeply segregated into “low-skill/low-pay” and “high-skill/high-pay”

Alvin Toffler in his book Future Shock (1970) posited that “The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn”.

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Labour Market Impact on Education

Lifelong Learning, Flexible Learning

Design and its languages

AI, drones and robots

Erosion of disciplinary boundaries

The block-chain university

What is the Future of Degrees?

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Impact on Education – New Forms of Work

The gig economy

Shorter working weeks

Changes in the nature of work – medical, legal, etc.

Managing the tension: Localism versus Globalism

The impact of the ubiquity of social media

What is the Future of Degrees

Will there still be universities?

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Impact on Research

Nature of Research

- data acquisition, data warehousing, data analytics
- microengineering
- artificial intelligence and its role in decision-making
- human-machine interfaces
- designed smart materials
- genetic engineering
- resilience studies

New conversations between sciences, humanities and technologies

Post-racism, Post-ethnicity, Towards new forms of Humanism

The Defence of Academic Freedom

1. Academic freedom is enshrined in the SA Constitution.
2. It can be eroded: self, institutional, external, systemic.
3. With every right there is a responsibility.

   Ensure that research is underpinned by:

   - the principles of replicability
   - unquestionable self and systemic integrity
   - unfettered conditions
   - astute risk-taking

4. Contribute to the social construction of scientific knowledge

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AT THE HEIGHT OF FEES MUST FALL

Universities found themselves all alone

A GROWING LEGITIMACY GAP

Locally and Globally

Fundamentally: what is the role of HE in society?

How do we (re-)build our connection with our publics?

ALL ABOUT THE KNOWLEDGE QUESTION

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Can only be Resolved through Engagement

dynamic interfaces and porous boundaries

advisory bodies

work integrated learning

anchor institutions

knowledge enterprise

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Engagement

as a way to reshape the knowledge project

as a way to re-envision the structure of the university

as a way to re-envision the relationship between the university and its many publics

as a way to produce new generations of socially engaged intellectuals

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The Future

The implications of moving from elite systems to massified ones.

As a global exercise, reassert the role of universities

Reestablish close relationship with our publics

Address the shifting technological terrain in R and T/L

Quality versus Relevance OR Quality and Relevance?

Design for the Future

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INFINITESIMALS – Amir Alexander (2014)

"On August 10, 1632, five men in flowing black robes convened in a somber Roman palazzo to pass judgment on a deceptively simple proposition: that a continuous line is composed of distinct and infinitely tiny parts. With the stroke of a pen the Jesuit fathers banned the doctrine of infinitesimals, announcing that it could never be taught or even mentioned. The concept was deemed dangerous and subversive, a threat to the belief that the world was an orderly place, governed by a strict and unchanging set of rules. If infinitesimals were ever accepted, the Jesuits feared, the entire world would be plunged into chaos."

Scientific American

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THANK YOU