STI for the Transformation Towards SDGs

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STI Policy Coherence

Paradox of STI:
- Many left behind and negative externalities
- Key to achieving SDGs with appropriate policies

Essential to
- Understand inter-relationships, interdependencies and trade-offs
- Leverage synergies among STI policies and SDGs
- At all levels - global, national, regional and local

Tools to support policy coherence:
- Integrated assessments
- Roadmaps from local to global
- Systems and holistic approaches
Key Messages

Synthesis

1. Framing and Introduction
2. The Challenges Ahead
3. Sustainable Development Pathways
4. Governing the Transformation

➢ >60 authors from ~20 organizations
➢ Launch: UN HLPF, Side Event 12 July, 13:15, 15th Floor
TWI2050 Report (www.TWI2050.org)

Key Messages

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Nakicenovic
Vision: Sustainable Future

One “backcasting” narrative and many transformational pathways

Legitimacy of BAU eroding

Targets 2050+ →

2030 Agenda

Source: After WBGU, 2011

The World in 2050 (www.TWI2050.org)
Six Major Transformations (TWI2050.org)

Digital revolution
Artificial intelligence, big data, biotech, nanotech, autonomous systems

Smart cities
Decent housing, mobility, sustainable infrastructure, pollution

Food, biosphere & water
Sustainable intensification, biodiversity, forests, oceans, healthy diets, nutrients

Human capacity & demography
Education, health, ageing, labor markets, gender, inequalities

Consumption & production
Resource use, circular economy, sufficiency, pollution

Decarbonization & energy
Energy access, efficiency, electrification, decent services

SDGs:
Prosperity
Social Inclusion
Sustainability

2018 #6
Impact of IC Technology Convergence

Source: Grubler et al., 2018
Technology Diffusion Compared
digital revolution

Source: Nokia Bell Labs, 2017
STI Transformational Change
Dynamic, Cumulative, Systemic and Uncertain

- Incremental – gradual (continuous) and cumulative improvements
- Disruptive – radical, discontinuous and abrupt as “gales of creative destruction”
- Add as many mail-coaches as you please, you will never get a railroad by so doing. [Schumpeter, 1935/1951, 136]
Disruptive Change

Easter Parade on Fifth Avenue, New York, 13 years apart

1900: where’s the car?  1913: where’s the horse?

R, shengzi.com/node/204.
Inscription: Tona Sela’s keynote lecture at AirCar, Santa Monica CA, 28 Oct 2014,
THANK YOU

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