Beyond GDP: Prioritizing Well-Being in the Age of Artificial Intelligence

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IEEE STANDARDS ASSOCIATION

The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems

Moving "From Principles to Practice" with standards projects, certification programs, and global consensus building to inspire the *Ethically Aligned Design* of autonomous and intelligent technologies

Executive Director, The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems

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These Views are My Own.

Introduction

"Beyond GDP" Speech

Robert F Kennedy
University of Kansas Speech
18 March 1968

"Too much and for too long, we seemed to have surrendered personal excellence and community values in the mere accumulation of material things"

The Stiglitz Report

(2008) Report by the Commission on the Measurement of Economic Performance and Social Progress

In February 2008, the President of the French Republic, Nicholas Sarkozy, unsatisfied with the present state of statistical information about the economy and the society created a Commission, subsequently called "The Commission on the Measurement of Economic Performance and Social Progress" (CMEPSP).

The Commission's aim has been to identify the limits of GDP as an indicator of economic performance and social progress.

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The Stiglitz Report

The key message, and unifying theme of the report, **is that the time is ripe for our measurement system to shift emphasis from measuring economic production to measuring people's well-being.**

The report is aimed at reaching policy-makers who wish to get a better sense of which **indicators are available and useful to design, implement and assess policies aimed at improving well-being and foster social progress**.

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Well-being Indicators

THE SUFFICIENCY
ECONOMY PHILOSOPHY

Well-being Indicators and AI

April 11, 2017

"The idea is that the changes that are brought forward by these digital technologies could be monitored across all the various dimensions of human well-being."

Fabrice Murtin, Senior Economist , Household Statistics and progress Measurement Division of the OECD Statistics Directorate

IEEE P7010 Well-being Metrics Standard
for Autonomous and Intelligent Systems™
An Introduction

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ABSTRACT

IEEE *P7010™, Well-being Metrics Standard for Autonomous and Intelligent Systems™* is a draft standard being developed as part of a suite of projects that were inspired by the IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems.[1] The purpose of the IEEE *P7010* draft standard, once approved, is to enable programmers, engineers, technologists and business managers to better consider how the products and services they create can increase human well-being based on a wider spectrum of measures than economic growth and productivity alone. The scope, structure, methodology and current progress of this draft standard are covered in this report.
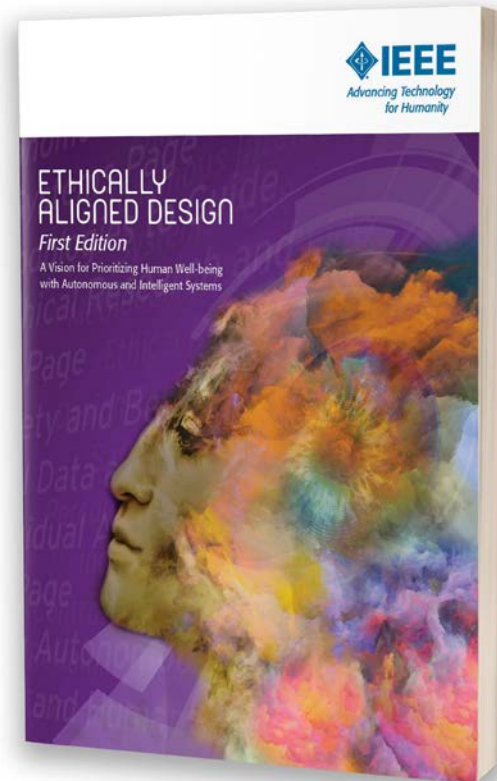
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the impact on human well-being at both an individual and societal level, innovation for well-being is impossible to quantify or qualify. The IEEE *P7010, Well-being Metrics Standard for Autonomous and Intelligent Systems* enables programmers, engineers, technologists and business managers to better consider how the products and services they create can increase human well-being based on a wider spectrum of measures than economic growth and productivity alone.

This paper presents the scope, structure, methodology and development of the draft IEEE *P7010, Well-being Metrics Standard for Autonomous and Intelligent Systems*. The Standard Working Group for the IEEE *P7010* effort, along with the Well-being Committee of The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems, were created in the belief that A/ISs should prioritize human well-being as an objective in all system designs, using the best available and widely accepted well-being metrics as their reference points.

How We Define Success for AI

IEEE Position Statement

Ethical Aspects of Autonomous and Intelligent Systems

Approved by the
IEEE Board of Directors (24 June 2019)

IEEE supports the inclusion of ethical considerations in the design and deployment of autonomous and intelligent systems.

Soraj Hongladarom

IEEE P7000™ Standardization Projects

IEEE P7000™ - Model Process for Addressing Ethical Concerns During System Design

IEEE P7001™ - Transparency of Autonomous Systems

IEEE P7002™ - Data Privacy Process

IEEE P7003™ - Algorithmic Bias Considerations

IEEE P7004™ - Standard on Child and Student Data Governance

IEEE P7005™ - Standard on Employer Data Governance

IEEE P7006™ - Standard on Personal Data AI Agent Working Group

IEEE P7007™ - Ontological Standard for Ethically driven Robotics and Automation Systems

IEEE P7008™ - Standard for Ethically Driven Nudging for Robotic, Intelligent and Autonomous Systems

IEEE P7009™ - Standard for Fail-Safe Design of Autonomous and Semi-Autonomous Systems

IEEE P7010™ - Wellbeing Metrics Standard for Ethical Artificial Intelligence and Autonomous Systems

IEEE P7011™ - Standard for the Process of Identifying and Rating the Trustworthiness of News Sources

IEEE P7012™ - Standard for Machine Readable Personal Privacy Terms
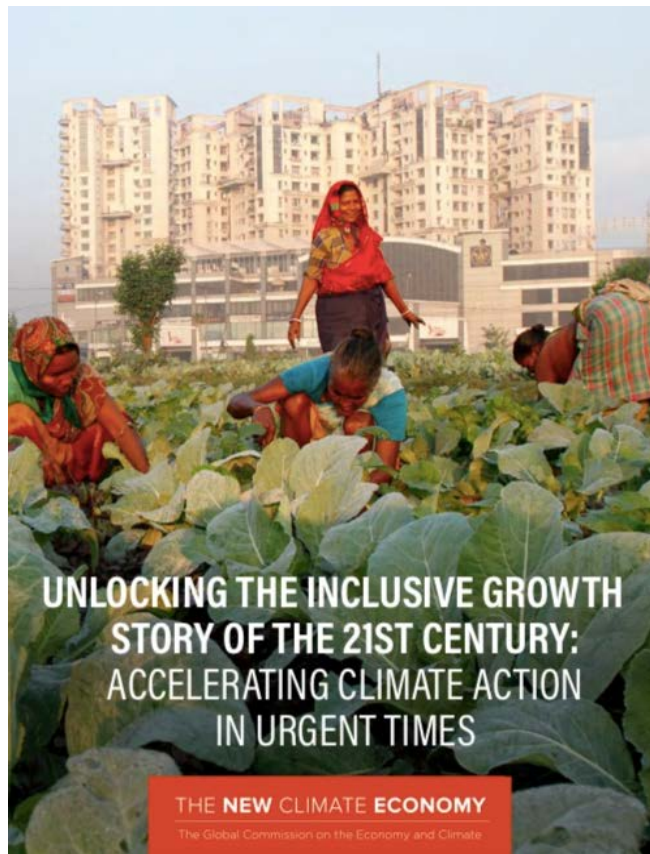
IEEE P7013™ - Inclusion and Application Standards for Automated Facial Analysis Technology

IEEE P7014™ - Standard for Ethical considerations in Emulated Empathy in Autonomous and Intelligent Systems

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General Principles

- **Human Rights -** A/IS shall be created and operated to respect, promote, and protect internationally recognized human rights.

- **Well-being -** A/IS creators shall adopt increased human well-being as a primary success criterion for development.

- **Data Agency -** A/IS creators shall empower individuals with the ability to access and securely share their data, to maintain people's capacity to have control over their digital identity.

- **Effectiveness -** A/IS creators and operators shall provide evidence of the effectiveness and fitness for purpose of A/IS.

- **Transparency -** The basis of a particular A/IS decision should always be discoverable.

- **Accountability -** A/IS shall be created and operated to provide an unambiguous rationale for all decisions made.

- **Awareness of Misuse -** A/IS creators shall guard against all potential misuses and risks of A/IS in operation.

- **Competence -** A/IS creators shall specify and operators shall adhere to the knowledge and skill required for safe and effective operation.

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The Global Commission on the Economy and Climate

UNLOCKING THE INCLUSIVE GROWTH STORY OF THE 21ST CENTURY: ACCELERATING CLIMATE ACTION IN URGENT TIMES

THE **NEW** CLIMATE ECONOMY
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"The growth story of the 21st century will unlock unprecedented opportunities and deliver a strong, sustainable, inclusive global economy.

The benefits of climate action are greater than ever before, while the costs of inaction continue to mount. It is time for a decisive shift to a new climate economy."

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EAD Introduction

Whether our ethical practices are Western (e.g., Aristotelian, Kantian), Eastern (e.g., Shinto, 墨家/School of Mo, Confucian), African (e.g., Ubuntu), or from another tradition, **honoring holistic definitions of societal prosperity is essential versus pursuing one-dimensional goals of increased productivity or gross domestic product** (GDP).

Autonomous and intelligent systems **should prioritize and have as their goal** the explicit honoring of our inalienable fundamental rights and dignity as well as **the increase of human flourishing and environmental sustainability**.

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Holistic human flourishing and environmental sustainability.

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