#SMARTer2030

business playbook

THIS PLAYBOOK PROVIDES SUPPORT TO BUSINESS LEADERS
WITH IDEAS TO ENABLE THE SUSTAINABILITY BENEFITS OF
ICT SOLUTIONS FOR A SMARTer2030

An initiative by:

GeSI
GLOBAL e-SUSTAINABILITY
INITIATIVE

supported by:

cscp

KEY MESSAGES
FOR BUSINESS LEADERS

ICT FACES SUBSTANTIAL AND EXCELLENT GROWTH PERSPECTIVES...

...at the same time generating major sustainability and broader social benefits. We estimate $2 trillion* in additional ICT revenues in 2030, thereof $0.4 trillion from connecting 2.5 billion new people to ICT services and $1.6 trillion from delivering new ICT services across 8 key sectors. Overall, ICT could enable $11.4 trillion stakeholder benefits, comprising new revenues from new business opportunities across key sectors and reduced costs from greater efficiencies and decreased waste.

BUSINESS LEADER ACTION IS KEY

To fully realize ICT's business and sustainability potential action is required: Business leaders should explore ICT-enabled opportunities, realize ICT-enabled cost savings and commit to bold action.

BUSINESS REQUIREMENTS

...vary by sector and should consider the differences between developing, emerging and developed markets.

*all currency data is in US Dollars

TO FULLY REALIZE ICT'S BUSINESS POTENTIAL ACTION IS REQUIRED
CALL TO ACTION

PRIORITY AREA 1
EXPLORING ICT-ENABLED OPPORTUNITIES

PRIORITY AREA 2
REALIZING ICT-ENABLED COST SAVINGS

PRIORITY AREA 3
COMMITTING TO BOLD ACTION

Connect with frontrunners, key sector actors and technology leaders. Learn, estimate and seize your business and revenue opportunities.
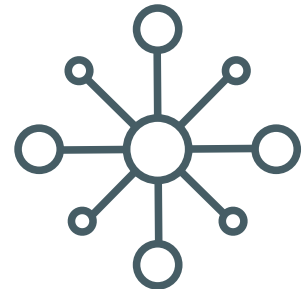
Understand the "T" of ICT and its application range to exploit immense cost savings in all sectors through greater efficiencies and less consumption of scarce resources.

Adapt ICT to your business. Innovate carbon efficient technologies, products and services. Collaborate with peers on ways to achieve greater carbon efficiency and set your own sustainability goals. Become part of the low carbon economy!
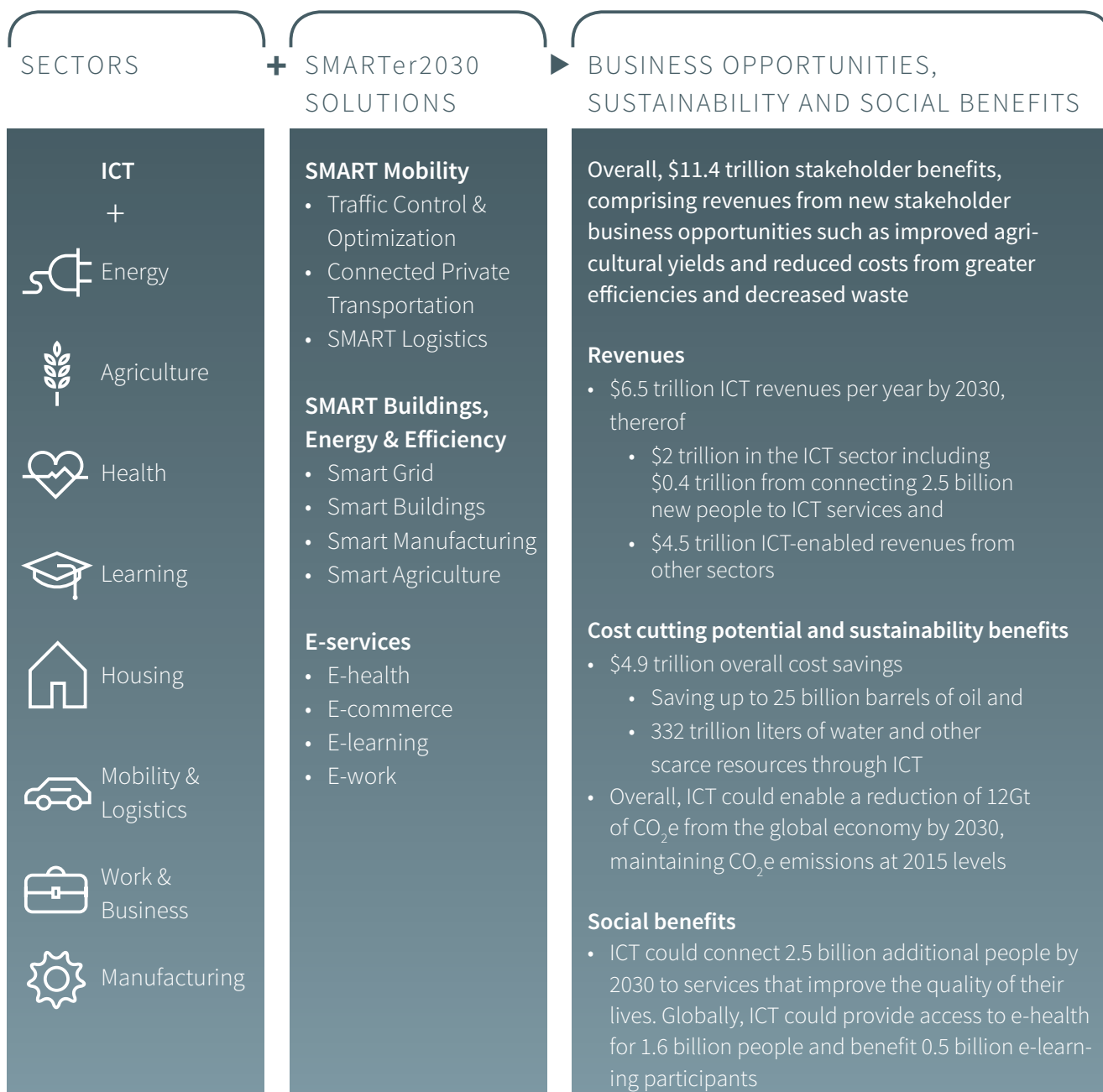
EXPLORING ICT-ENABLED OPPORTUNITIES

KEY BENEFITS OF ICT

ICT solutions are being implemented in one or more of the following key sectors:
Energy, Agriculture, Health, Learning, Housing, Mobility & Logistics, Work & Business, Manufacturing.
By 2030, besides positive economic effects (revenue, growth and cost cutting potential), there will be sustainability benefits (reduction / halting of CO_2 emissions, saving of scarce resources) as well as social benefits (expanded internet connectivity, e-services).

SECTORS + SMARTer2030 SOLUTIONS ▶ BUSINESS OPPORTUNITIES, SUSTAINABILITY AND SOCIAL BENEFITS

ICT +

- Energy
- Agriculture
- Health
- Learning
- Housing
- Mobility & Logistics
- Work & Business
- Manufacturing

SMART Mobility
- Traffic Control & Optimization
- Connected Private Transportation
- SMART Logistics

SMART Buildings, Energy & Efficiency
- Smart Grid
- Smart Buildings
- Smart Manufacturing
- Smart Agriculture

E-services
- E-health
- E-commerce
- E-learning
- E-work

Overall, $11.4 trillion stakeholder benefits, comprising revenues from new stakeholder business opportunities such as improved agri-cultural yields and reduced costs from greater efficiencies and decreased waste

Revenues
- $6.5 trillion ICT revenues per year by 2030, thererof
  - $2 trillion in the ICT sector including $0.4 trillion from connecting 2.5 billion new people to ICT services and
  - $4.5 trillion ICT-enabled revenues from other sectors

Cost cutting potential and sustainability benefits
- $4.9 trillion overall cost savings
  - Saving up to 25 billion barrels of oil and
  - 332 trillion liters of water and other scarce resources through ICT
- Overall, ICT could enable a reduction of 12Gt of CO_2e from the global economy by 2030, maintaining CO_2e emissions at 2015 levels

Social benefits
- ICT could connect 2.5 billion additional people by 2030 to services that improve the quality of their lives. Globally, ICT could provide access to e-health for 1.6 billion people and benefit 0.5 billion e-learn-ing participants

PRIORITY AREA 1
EXPLORING ICT-ENABLED OPPORTUNITIES

ICT-ENABLED BENEFITS PER SELECTED USE CASE

As illustrated in selected use cases below, ICT-enabled global benefits by 2030 are achieved in both key sectors and the ICT sector.

USE CASE STAKEHOLDERS	ICT SECTOR*

E-COMMERCE

Retailers' additional revenues thanks to e-commerce
$1.1 Tr

ICT revenues from developing online shopping platforms
$580 Bn

E-HEALTH

Private health sector additional revenues from selling e-health services to it's clients
$209 Bn

ICT revenues from wearable devices
$63 Bn

TRAFFIC CONTROL & OPTIMIZATION

Traffic control panel companies' additional revenues
$704 Mn

ICT revenues from smart traffic devices
$95 Mn

SMART MANUFACTURING

Industry cost savings thanks to process optimization
$12 Bn

ICT revenues from industrial machinery optimized with smart sensors
$3 Bn

* Note: Revenue effects from connecting new users to ICT are not taken into account to avoid overlapping.
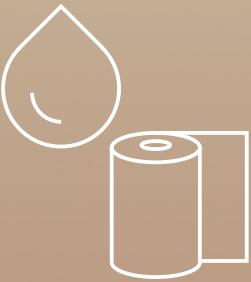
PRIORITY AREA 2
REALIZING ICT-ENABLED COST SAVINGS

ICT-ENABLED GLOBAL RESOURCE SAVINGS BY 2030

The following table illustrates global savings of resources in terms of amount and money by 2030. Savings occur through the implementation of smart ICT solutions across identified "use cases" as examples show on the previous page. Total ICT-enabled savings of resources will equal nearly $5 trillion.

1.1 Tr	Liters of fuel saved across multiple use cases
× 1.08	$/Liter *(www.globalpetrolprices.com/gasoline_prices)*
= **1.1** Tr	$ from fuel saved across multiple use cases

17 Bn	MWh of energy saved across multiple use cases
× 71.24	$/MWh *(European Commission data with Accenture correction rate)*
= **1.2** Tr	$ from energy saved across multiple use cases

332 Tr	Liters of water saved across multiple use cases
× 0.0013	$/Liter *(http://researcher.watson.ibm.com)*
= **145** Bn	$ from water saved across multiple use cases
91 Mn	Tons of paper saved across multiple use cases
× 266	$/Ton *(www.woodbusiness.ca)*
= **24** Bn	$ from paper saved across multiple use cases

= **2.4** Tr	$ from other savings

Global aggregated metrics translated into $ using current prices (2015)

PRIORITY AREA 2
REALIZING ICT-ENABLED COST SAVINGS

THE SAVINGS POTENTIAL OF SMART BUILDING SOLUTIONS

The following case study illustrates how automation systems for smart buildings can realize cost savings based on reduced energy consumption.

OBJECT: a Large New York City hotel, built in 1963 with a total surface of 321,686 sq. ft., equivalent to 12 floors/ 250+ guest rooms. As of 2015, the building is equipped with 5 building management systems / controls systems

CONCEPT: Implementation of specific automation systems within broader smart building solutions, looking for a significant reduction in energy consumption

MAIN OPTIMIZATION AREAS IDENTIFIED:
1. Suboptimal VAV/AHU1* scheduling
2. Sub optimally economized guest room operations
3. Stuck/leaking steam valves, valve/damper hunting and boiler staging, chilled water re-set

SMART BUILDING SOLUTIONS IMPLEMENTED (included as upfront and ongoing costs):
• Integration of automated fault detection systems and diagnosis tools to control systems
• Continuous building monitoring and analytics
• Measurement and verification systems
• Program management and operational guidelines

CALCULATIONS:
Time horizon considerations:
• Implementation of measures in 2016, last applicable saving for 2025 (10 full years of application)
Economic considerations:
• Upfront cost of $150,000 + $0.3 per sq.ft.
• Yearly cost of $20,000 + $0.2 per sq.ft.
• Yearly savings: $150,000, increased by 5% in the first two years due to increased efficiency
• Discount rate = national bond 10-years (i.e.: US Govt. Bond Yield: 2.0%)

RESULTS:
• **Net Present Value of implementation costs + obtained savings in energy consumption: between $525,000 and $575,000**
• Initial investment and installation costs estimation: $250,000
• Investment recovery after 2 - 3 years
• **Maximum annual savings in electricity consumption: between $160,000 and $170,000**
• CO_2e that has been abated due to this project (2016-2025): 13.7k MWh = 1,345 tn CO_2e
• CO_2e abated per monetary unit (in $) invested in the project: $747 = 1 tn abated

* VAV=Variable Air Volume, AHU=Air Handling Unit

PRIORITY AREA 3
COMMITTING TO BOLD ACTION

LEADING BUSINESSES HAVE EITHER COMMITTED TO CO_2 REDUCTION TARGETS OR ALREADY TAKEN ACTION TO BUILD THE PROSPEROUS LOW CARBON ECONOMY OF THE FUTURE

BUSINESS COALITIONS

Business Coalitions* recommend:

- Increase the current level of urgency and ambition to stabilize global emissions before the end of this decade in order to raise bold business opportunities
- Set clear long-term emissions reduction targets in line with the scientific 2°C target for restricting global warming
- Implement domestic policies towards 2030 that support bold business action to cut GHG emissions
- Ensure that all policy regimes dealing with fiscal, energy, industry and trade-related issues provide actionable incentives for an early transition to a low carbon future
- Enhance existing mechanisms by which we improve transparency and accountability in monitoring climate ambition and action, and ensure a stable and predictable low carbon investment environment
- Continue to scale up public finance to support resilience-building and accelerate low carbon investment by the private sector
- Innovate low carbon materials, products and services
- Switch to 100% procurement of low-carbon electricity
- Integrate internal carbon prices to affect investments decisions and in anticipation of regulated carbon pricing
- Collaborate with peers on low carbon commodity sourcing standards to eliminate deforestation from their value chains
- Commit to responsible corporate engagement in climate policy and aligning public affairs with sustainability strategies
- For investors, publishing and reducing the carbon footprint of their portfolios and setting clear targets to reduce it
- Collaborate to reduce emissions in their supply chains and at sectoral level
- Develop low carbon technology partnerships to speed the deployment of low carbon and breakthrough technologies

* Business Coalitions referred to are: We Mean Business, Partners of the Business and Climate Summit, and others

PRIORITY AREA 3
COMMITTING TO BOLD ACTION

MULTILATERALS

Multilaterals* recommend:
- Demonstrate leadership in advancing practical solutions and strategies addressing climate change
- Align a climate change business strategy with a UN-led initiative that has high visibility
- Communicate publicly a company's actions on climate change
- Share best and emerging practices and gain access to the experiences of peers
- Shape the climate change policy agenda and call for policy frameworks that reward leadership and innovation
- CO_2 emissions generated by the telecommunication/ICT sector to be decreased per device by 30% by 2020**

SELECTED COMPANIES

Selected company examples***
- Reduce worldwide CO_2e emission intensity by 80% compared to 1996/97 levels by December 2020 (KPI)
- Reduce carbon emissions in Japan by 30 million tons annually by 2020 through the provision of advanced, energy-efficient technologies and solutions
- Commitment to make operations carbon neutral. To achieve net zero emissions for data centers, software development labs, offices, and employee business air travel in over 100 countries around the world
- Reduce CO_2 emissions by 20 percent by 2020 compared with 2008 through effective efficiency measures
- Reduce direct CO_2e emissions intensity of vehicle fleet by 25% per kilometer from 2010 to 2015 through purchases of smaller and more efficient vehicles
- Reduce CO_2 emissions across entire value chain by 40% from 2010 to 2020
- Reduce emissions intensity of operations by 20% by 2020 through energy efficiency and renewable energy purchases and installation

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