



Maarten Botterman, IGF 2016 Guadalajara, 6 December 2016

Building Global Trust in the Internet of Things

THE IGF DYNAMIC COALITION ON IOT BRINGS TOGETHER STAKEHOLDERS FROM ALL OVER THE WORLD TO ENGAGE IN A DIALOGUE ON “GOOD PRACTICE” IN IOT, WITH THE INTENT TO FIND A REALISTIC AND ETHICAL WAY FORWARD

Benefits ... and challenges

- ▶ New technologies bring us ways to respond to today's challenges that never existed before ... and come with new challenges
- ▶ As technologies are not good or bad in themselves – it is how we use them.

Societal challenges

Healthcare;
Independent living;
Secure society;
Sustainable society

Economic challenges

Innovation; growth;
profit

Environmental challenges

Scarce resources;
waste reduction;
environmental
monitoring



Governance

Global standards, open standards,
multistakeholder involvement, ethical IoT

Privacy and data collection

Big data issues, cloud issues (location, jurisdiction, accountability), digital literacy

Security

Access, Autonomous systems, cyber attacks on new end points

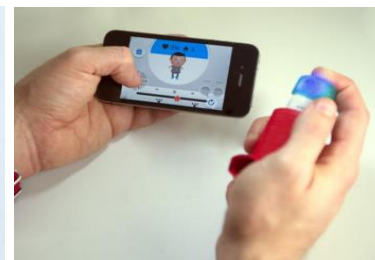
Address specific societal issues

- ▶ Connected technologies are a necessity to addressing multiple societal challenges in a doable way.
- ▶ It requires global knowledge about solutions, and local knowledge about issues, and how they can be addressed.



Many applications...

- Ranging from tsunami and earthquake disaster warning to air quality monitoring to wildlife tracking to crop observing to blood pressure metering and steps counting to memory support devices countering all kind of societal challenges



Global approach towards IoT

IGF AND THE
DYNAMIC COALITION
ON IOT

IoT is part of Internet

1. IoT is merely a specific aspects of the Internet, just like social media, communication and access to information
2. IoT has specific characteristics that will co-determine the development of future networks. This includes;
 - ▶ Collecting, storing and providing access to many data related on observations by sensors;
 - ▶ Autonomous networks with actuators that take action following receipt of specific data according to pre-programmed decision models, learning, or external interventions.

Dynamic Coalition on IoT

- ▶ Set up in Hyderabad (IGF, 2008) and active ever since during IGF and regional meetings
- ▶ Aim is to develop a shared understanding
 - ▶ on Global Good Practice
 - ▶ with regards to the Internet of Things
- ▶ most IoT dialogues take place in silos with single stakeholders – in DC IoT ***stakeholders meet on equal terms at global level***

Internet of Things Good Practice Principle

- ▶ Internet of Things Good Practice aims at developing IoT products, ecosystems and services **taking ethical considerations into account from the outset**, both in the development, deployment and use phases of the life cycle, **thus to find an ethical, sustainable way ahead** using IoT helping to **create a free, secure and enabling rights based** environment: a future we want.

(IGF Dynamic Coalition on IoT: “IoT Good Practice policies”)

Current IoT Declaration

I - Achieve reasonable trust through defining together:

1. Meaningful transparency to users
2. User control of data
3. Education
4. Security
5. Privacy

II - Commitment from stakeholders to take this into account from the outset.

Focus of today's session

- ▶ Statement: the “ethical approach” in IoT should find a balance in being “sufficient” from a civil society point of view, and “do-able” from a business point of view, and sustainable from a technical point of view.
- ▶ *Question: do we need A “Principle” on “using the most available technology possible” to stimulate developments to be applicable in more regions around the world?*
- ▶ Statement: there is a high need to raise IoT awareness with citizens and consumers. In this, people should not be expected to be technical experts.
- ▶ *Question: would there be value in having an ontology for IoT applications on: a. Privacy; b. Security; c. Safety ?*
- ▶ Statement: Proper security avoiding easy capture of IoT equipment is a necessity. This will need to come with appropriate attribution of responsibility in ensuring this is handled sufficiently.

Questions for tomorrow ...

- ▶ Complexity will go up: how about **using technology to deal with complexity** - how can we ensure technology supports our values and ensures "transparency" and "accountability". Cryptography, algorithms and blockchain may come up here;
- ▶ Autonomous self-learning environments are likely to emerge: how to deal with intelligence in (future) IoT environments where actuators are triggered to action by sensors and are self-learning what the best action is to support their task. Do we **need to implement guidelines** a la Asimov's Three Laws?
- ▶ Data protection and privacy concerns guide a lot of current developments: seeking ways forward that are doable and serve us all? What about **data location**? How to prevent **data owned become a liability**? What kind of services could help?

We create the world of tomorrow with
the choices and actions of today ...



In summary

Embrace IoT to address societal challenges

- ▶ We need IoT to keep this world manageable

Create an IoT environment that encourages investments

- ▶ Involve all stakeholders
- ▶ Create ecosystem
- ▶ Stimulate awareness and feedback
- ▶ Provide legal clarity and review the legal mechanisms

Ensure emergence of a trusted IoT environment

- ▶ Meaningful transparency
- ▶ Clear accountability
- ▶ Real choice

The Ball is now In Your Court!

PARTICIPATE?

- GOOGLE FOR: REVIEW, IGF, IOT
- SIGN UP FOR THE IGF DC IOT MAILING LIST
- EMAIL TO
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More information

- ▶ Read and comment on draft Declaration:
<https://www.intgovforum.org/multilingual/content/2016-dynamic-coalition-output-documents>
- ▶ Read more about the previous work of DC IoT:
<http://www.iot-dynamic-coalition.org/>
- ▶ Sign up for the DC IoT mailing list:
http://intgovforum.org/mailman/listinfo/dc_iot_intgovforum.org



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