

## BEST PRACTISE FORUM ON ARTIFICIAL INTELLIGENCE, IOT AND BIG DATA

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### Needs and Requirements

The AI applications are a newly introduced services into Internet and most of time they are used together with IOT applications and big data on distributed cloud. The MAG-IGF has seen the need to discuss and promote more educational and awareness information on these new technologies as experienced, many users and importantly decision makers were not fully informed on its benefits and disadvantages. At this stage, we are on the eve of much more uptake of AI applications, and in order to ensure a sustainable way forward it is important to have this debate now, as we have our first experiences and as much more will be developed in an increasingly rapid fashion.

### Background

The application of Artificial Intelligence technologies like speech recognition, chatbox, etc. to internet are considerably increasing, significantly modifying our way of life. At the same time smart sensors distributed to several objects collect and distribute a huge amount of data over the Cloud.

Thanks to the availability of big data and cloud computing, main players like Google, Facebook, Amazon can classify and group user data by means of machine learning applications, to extract user profiles and models and apply them in a variety of contexts. Self-learning algorithms are also available on our mobile devices, influencing our choices, our purchases, etc.

Thanks to the rapid spread of IoT devices and services, we are confronted with an increased complexity that needs to be managed, and [ML and] AI will play an important role in that. Towards the future, more and more IoT enabled systems (such as cars, houses, health devices, etc. ) and environments (such as smart cities, smart transport systems, natural disaster warning systems will have an increasing AI component and may even become autonomous, with decisions taken by AI.

**Commented [MB1]:** There is a thin line between Machine Learning and Artificial Intelligence – many of the applications used as example are currently, most likely, ML applications, yet I would expect many of them to move into AI with future software upgrades.

BPF proposal on AI, IOT and Big Data Analysis in Distributed Cloud Environment is specifically targeting a study group environment where IGF may discuss on these buzz words holistically and thereafter the output of this process will result in the development of a document on these topics. This may help to take maximum advantages of the technologies and to avoid any misuse that may be harmful to person, society or nations. Elements as transparency, accountability, security and privacy are key aspects in this.

The proposed BPF is very much relevant with these days' multistakeholder IGF discussions. It will take advantage and will analyze the main results that have already discussed in different working groups, forums and internet community i.e. ICANN, RIRs, IETF, ITU, AgID, IEE, OECD, etc. organizations that are already debating those technologies with their own communities.

### Issue for the BPF

There are several benefits coming from AI, IoT and Big data: they can help improve efficiency and cost saving;

they can enable better and more accurate decision-making and can be used for discovering specific data patterns, complex cause and effect relationships, etc. It is recognized that technology is crucial to help achieve the SDGs – and AI, IoT and Big Data are playing a big role in that already today.

This could help people to solve complex problems and global challenges related to the environment, transportation, health, etc. Also on the level of the individual internet user there is an almost endless and growing list of examples of how AI could help. There are AI applications, for instance, designed to support doctors in diagnosing and detecting symptoms of diseases like Alzheimer and Parkinson, applications supporting patients or helping to improve the lives of people with disabilities, and AI in imbedded in tools intend to assist people in organising their daily lives and work. Furthermore, AI supported BIG Data Analysis on human genome data may lead to early diagnosis to some diseases Diabetes. On the other hand this may lead to develop biological weapon against a particular race.

While those new technologies could help to tackle many global challenges and support people in their daily pursuits, there are a large number of unknown and potential negative impacts and risks, for example related to privacy and discrimination, inequality and infringement of human rights.

This is an issue of importance to all stakeholder groups, as all will be impacted by and benefit from them. It is important establish a dialogue with all stakeholders to understand how Internet could best benefit from AI, IoT and Big Data and to identify the risks and seeks ways to mitigate unwanted side-effects, e.g. by setting limits to the automated decision making.

Several social and economic issues related to the application of the AI, IoT and Big Data to the internet can be identified. Therefore, a debate would be required to help stakeholders to pick out the right measures and policies to be adopted for managing the impact of those new technologies on the society.

For the AI, for instance, it would be important to request transparency in the AI algorithms, as they may induce decisions with severe impacts on people, they can categorize people based on their preferences, etc. AI applications should be designed to respect common society rules, cultural and religious difference, etc. (AI Ethics).

**Commented [MB2]:** Also important in Big Data and IoT – are the algorithms telling the “things” to do “legal things” and what may the impact be

For Big Data Analysis in Distributed Cloud Environment is particularly very important to mutually discuss in a multi-stakeholder platform regarding the distributed cloud environment services where data analysis are used. Because, block-chain alike services and products will start flooding our world sooner than we are expecting. Moreover, lifestyle sharing services like Uber, AirBnB, etc. is having a parallel domain than the conventional services.

### Objectives

BPF proposal on AI, IOT and Big Data should specifically target to be a multi-stakeholder and multi-disciplinary platform to understand the wider context of ‘Artificial Intelligence’, ‘IOT’ and ‘Big Data analysis and distributed cloud’ for each stakeholder group. Moreover it should discuss on opportunities and threats related to the application of these technologies on Internet, and ways to stimulate the positive or mitigate the negative such as implementing “ethical by design”, including early attention for transparency, privacy and security. Focusing on the benefits, the use of the AI, IOT and Big Data could be analysed for reaching SDG objectives.

The BPF may be started with the study of the context of Artificial Intelligence, IoT and Big Data. Several focus groups may be organized, one for each of the following tasks:

1. Identify existing platforms and communication mechanisms between stakeholder groups discussing

or well-placed to discuss AI, IOT and Big Data issues;

2. Analyse the main AI, IOT and Big Data applications used in Internet and the related benefits/threats;
3. Identify common problems and best practices to fix them;
4. Activate a network with the main existing working group on AI, IoT and Big Data (ICANN, RIRs, IETF, ITU, AgID, OECD, IEEE, [the relevant DCs within the IGF framework](#), etc.) to share results and best practises;
5. Identify how AI, IOT and Big Data can be used to reach SDG objectives; Identify the impacts on policies and regulations as well as budget implications for governments (computing power, bandwidth, technical capacity);
6. Verify roles and responsibilities of the different stakeholder groups and explore if there is ground for global common policy recommendations as outcome of the BPF.

During the first virtual meeting the BPF will decide how to distribute the tasks for 2018 and 2019. It could be reasonable to have the first 4 groups of activities managed during the 2018 leaving the others to be developed during 2019.

#### **Expected Output(s):**

As anticipated before, the BPF intends to stimulate the debate between stakeholders, laying the basis for a continuous dialogue, within and outside the context of the IGF. A tangible output of the process will be one or more documents, based on stakeholder input, on the benefit and threats related to AI, IOT and Big Data and the main results reached by the existing forums.

Those documents could help to take maximum advantages of these technologies and to avoid any misuse.

An initial document will be issued in 2018 that should report the main AI, IOT and Big Data applications used in Internet, the related benefits and the main results and best practises coming from existing working groups (ICANN, RIRs, IETF, ITU, AgID, OECD, IEEE, [the relevant DCs within the IGF framework](#), etc.).

#### **Outreach and Dissemination Plan/Strategy:**

As mentioned, we envisage a broad participation from the different stakeholder groups and multi-disciplinary input, and intend to obtain this by a mix of general outreach to all interested parties and targeted outreach to existing working groups on AI related issues (e.g. ICANN, RIRs, IETF, ITU, AgID, OECD, IEEE, [the relevant DCs within the IGF framework](#), etc.).

AI, IoT, Big Data and Distributed Cloud Environment is having their transmission and delivery platform based on internet. That's why IGF has a much greater role to play to have policy level alignment among economies before the flood gate of these high computational services are opened.

The main results discussed during the first year by the BPF will be collected in the first report that will be presented during IGF 2018. We expect that the different stakeholders involved in the BPF's discussions will take the BPF's report back to their respective communities. A second report will be issued on 2019 that will be more focused on how AI, IOT and Big Data can be used to reach SDG objectives and on the impacts on policies and regulations.

#### **Timeframe for the work (2-years)**

Considering the complexity of the BPF and the several technologies involve this proposal is for a BPF will require at least 2 years. This should be sufficient time to identify stakeholders and discuss main issues. After the two years, it should become clear whether a follow-up BPF would be useful.

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