

LIVING N100 FRAMEWORKS 2019/2020

N100 CONCLUSIONS AND BEGINNINGS OF FURTHER INSIGHTS

The goals of the symposium were and are:

- 1) to provide a regular platform for cross-disciplinary dialogue that would include multiple branches of academia, business, politics, diplomacy, innovation, and entrepreneurship
- 2) to build a community of international professionals that aspire to see beyond the horizon of their expert fields, and who seek inspiration from areas that are not a daily part of their professional life. We believe that mutual inspiration helps to gain more creativity and the ability to look at the world without the barriers of one's own expert field.
- 3) to turn away from the ubiquitous crisis-driven language towards a responsible, yet future-oriented narrative of the fate of humanity. The future will surely surprise us - a lot. But we have plenty of ways of making sure that it will be a pleasant surprise
- 4) The outcome of the symposium was to create concrete living frameworks for subsequent work for smaller working groups, thus paving way for a more practically oriented 3rd edition of the Symposium **(19 - 20 of May 2021)** - these frameworks will be published in a document *Next100 Frameworks* (working title) which stems from the conference report

We believe, the symposium managed to achieve all four goals, to various degrees of satisfaction

N100 Live Report - Frameworks 2019/2020 - is being compiled from your presentations, notes from speaker interventions, research we've done on the areas and any new useful material we have acquired or found (whether from speakers or elsewhere) We will be sending this to all our speakers (later) **This is the Executive Summary - main messages we have identified from the N100.**

We will edit the full report and publish it as soon as possible. We aim to keep updating this report throughout the year until the next Next 100 Symposium (19-20 May 2021) after which we will start a new one with a final summary of the previous one.



THE NEXT 100 SYMPOSIUM IN NUMBERS

PROGRAMME

Over **20 disciplines** covered in 7 Next 100 Areas:

POLITICS | TECHNOLOGY | SOCIETY
ENERGY & ENVIRONMENT | DEFENCE & SECURITY
ECONOMY | SCIENCE

12 Spotlights | **7 One-on-Ones** | **26 Breakout Roundtables**
8 Speaker's Corners | **4 Alternative shows**

SPEAKERS

57 speakers from over 20 nations (covering 4 continents)

N100's **interdisciplinarity**:

- ❖ more than half the speakers work in **both** technology fields and the social sciences
- ❖ 80% of speakers work in 3 or more disciplines

WHO ATTENDED

20% Think tanks | NGOs | Foundations | EU institutions

20% Science community | Research institutes

20% Universities | Academia | Students

20% Governmental | Diplomatic institutions

20% Private sector companies

www.next100symposium.org

The **statistics** show that the first and second goals were achieved to a highly satisfactory degree. The third and fourth goal (compile the frameworks in an “opportunity and solutions-driven way”) proved to be the hardest to achieve. In order to streamline the speakers’ contribution to the overall practically oriented goal of the symposium, the speakers were asked to follow a unifying set of questions:

1. The current state of affairs in a particular area/discipline
2. What is it that stakeholders want to achieve in their particular region/area/topic?
3. What are the practical steps to be taken to take us there?
4. What will happen/what are the benefits if we succeed? What is the wider social impact?
5. What are the obstacles? What are the steps to take to overcome the obstacles?
6. What happens if we do not succeed? Are there alternative plans/ideas?

This logic helped - to various degrees - to look for similarities/differences across disciplines and sections.

While working on the **symposium report/Next100 Frameworks** paper, it is clear that to meaningfully combine the wealth of information and insights from the two days of the symposium is a challenge. Also, it is an even greater challenge to move the paper’s outcome beyond stating the obvious and come up with suggestions of a practical, doable and yet innovative nature.

UNIFYING THREADS - FRAMING THE GENERAL MESSAGE OF N100 2019

Despite these challenges, several promising & unifying threads emerged as a critical lead to frame the general message of the symposium.

- 1) THE CASE FOR DIGITAL (SCIENTIFIC) MULTILATERALISM**
 - 2) THE DIVIDE: THE TECH-POSITIVES/TECH-HAVES/TECH-BENEFICIARIES and THE OTHERS**
 - 3) KEEPING THE HUMAN IN THE LOOP: THE CASE FOR HUMAN RESPONSIBLE AI/TECH DEVELOPMENT**
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1. THE CASE FOR DIGITAL/PARALLEL/SCIENTIFIC MULTILATERALISM

Lately, it became folklorish to complain about a lack of international/global cooperation across a vast array of issues (e. g. environment, taxation, security, arms, tech-regulations, wealth distribution, etc.). And rightly so - as you will see, the question of global rules, or at least a cooperation, cuts across all three threads. Yet, mostly the argument stops at various versions of the following: “We” need more international cooperation but it is difficult to move beyond the egotistically defined agenda of various actors and interest groups in the progressively atomized world. While it is hard to disagree with such a predicament, the debates at diverse sessions of the N100 Symposium offered one possible way forward, something that the living report terms digital/parallel/scientific multilateralism. Already, during the first N100 Symposium (2018), a call was made for a “CERN for AI”. We certainly do not wish for inflation and misuse of CERN as a global model scientific organization. Yet, at a deep level, the seven-decades-old idea of *science for peace* can clearly be translated into today’s world. Today, we face a global quest for domination in AI and other data-driven technologies with their dual (military and civil) usage with Europe hardly catching up in the run. Sound similar? Look at CERN’s own description of its origins:

“At the end of the Second World War, European science was no longer world-class. Following the example of international organizations, a handful of visionary scientists imagined creating a European atomic physics laboratory (...) Such a laboratory would not only unite European scientists but also allow them to share the increasing costs of nuclear physics facilities (...) Their vision was both to stop the brain drain to America that had begun during the Second World War and to provide a force for unity in post-war Europe. Today, CERN unites scientists from around the world in the pursuit of knowledge.”

Listening to the N100 presentations, similar calls could be heard across the board: Tim Palmer’s plea for a pan-European data-processing centre that would enable a much deeper understanding of climate change (a CERN for climate change), Robert-Jan Smits’ convincing case for internationally rooted Open Science, Vladimir Marik’s case for a European AI research centre, to name just a few. As the EU is seeking greater competitiveness (and strategic autonomy) in the future data-driven economy, there has been a growing recognition of such a need also on the side of governments and the European Commission. The N100 report will, thus, suggest to explore and expand the room for a non-zero sum, inclusive and multilateral concept of a comprehensive AI/digital and data-related research infrastructure that could serve as an embryonic bottom-up platform for a “digital multilateralism for the 21st century”.

Unfortunately, a brief overview of the current EC R&D&I supporting instruments are overly compartmentalized and too narrow to allow a true interconnection of previously distant areas.

The **key questions** are

- ❖ What is the current thinking about such an endeavour among governments and big financial players?

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- ❖ Where are similar initiatives?
 - ❖ What can be the first concrete steps in such a direction? What are the obstacles?
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2) THE DIVIDE: THE TECH-POSITIVES/TECH-HAVES/TECH-BENEFICIARIES and THE OTHERS

The risks associated with uneven access to the benefits of information and communication technologies (and other hi-tech developments that are dramatically changing the socio-economic environment) and the likelihood of a further increase of inequality of access have been widely acknowledged by now. “Digital divide” intensifies the already existing socio-economic fault lines like age, education, income, gender or race. Add the growing misuse (or abuse) of personal data and disinformation campaigns into the grinder and what you get is an explosive mix of fear, populism and anxiety, all related to the effects of technology and globalization sneaking into everyone’s life. In our understanding, the digital divide is not a narrow concept of people not having access to the internet, not understanding or utilising big data and AI, or simply not trusting any technology. Instead, it is a broader issue of people not being able to profit from the wide range of possibilities the digitally-driven economy and society, as well as new technologies offer.

It is necessary to lower the “participation inequality” where potential users lack the skills to use new or even old tools.

This divide is also closely linked to the broader question of “digital globalization”. Technologies were always instrumental for globalisation. We are experiencing a new phase of globalisation defined by exponentially increasing flows of data and information despite bouts of economic recession. “Digital flows now exert a larger impact on GDP growth than the centuries-old trade in goods, according to a new McKinsey Global Institute (MGI) report, Digital globalization: The new era of global flows.”

Boundaries of activity that drives economies or *the* global economy have seriously blurred, transformed or disappeared. Close to 90% of tech-based start-ups work across borders, whether commercially or in expertise, no endeavours are restricted from being global and competition thrives even between the smallest and the largest enterprises. “If the rest of the world had increased its participation in global flows at the same rate as the top quartile over the past decade, world GDP would be \$10 trillion, or 13%, higher today.” ([McKinsey Global Institute](#), 2016)

Key Questions

- ❖ How to lower the “participation inequality” and introduce, demonstrate and empower potential users who lack the skills to use new or even old tools (technology)?
 - ❖ How do governments and civil society harness the control over the new phase of ‘digital’ globalisation?
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3) KEEPING THE HUMAN IN THE LOOP: THE CASE FOR HUMAN RESPONSIBLE AI/TECH DEVELOPMENT

How to achieve that if we don't want to start with regulation? How to achieve that if the interests differ so vastly?

Even the new research supporting instruments of the European Commission seem to drive the wedge between tech and social sciences deeper: there is little attempt to foster a natural and organic link between these two, rather, the social sciences are again forced to “study the impact” of technologies or improving access to technologies, rather than being encouraged to promote a closer marriage of the two.

The dawn of a completely global operation of trade, movement, intelligence, economy, society and existence is surpassed or upgraded to a globalisation formed by digital webs allowing the progress of technology, worldwide proliferation of skills that not only exceed the physical domain but the domain of human capacity on its own. It is now enhanced and empowered by tools humans have created themselves to empower humans. This is digitalisation.

In order to foster human progress in developing technologies like Artificial Intelligence better and more profound multilateralism must be utilised. We say utilised and not designed or created because the infrastructure is already there, it's just not being used to close the gap between the social sciences and technology. The notion of approaching these endeavours in an interdisciplinary way, embracing the complexity rather than fearing it or avoiding it out of convenience, apathy or disinterest is absolutely key. The Next 100 Symposium and its interventions, previous as well as subsequent research all call out for international collaborative strategy, multilateral and interdisciplinary approaches and a genuine thirst for bridging the gap between the realms of technology, science & digitalisation and the realms of the social sciences including economy, politics, society, environmentalism and so much more.

It would be simple to list the pros and cons of big data's impact or effect on various global sectors (such as the N100 Areas in this report), it would be slightly harder to then argue the pros side, as it is much more of a popular, therefore acquainted set of arguments to back the cons, the negative, the sceptical and the “fearful” aspects of “data” and “technology”. It is yet nearly unexplored to focus on the pros, the positive, and the opportunity-filled side of using data and new technologies. Of course, big data has been a centerpoint in economic decision making and general running of the system. Big data has not, however, been the centerpoint, or even friendly assistant to political, social, environmental decision making on a grand scale, used to its fullest potential. The easiness and obviousness with which the financial sectors use big data shed an unfortunate contrast on how much big data is underused, underestimated (in the sense of its potential and application variety) and demonized in other sectors.

Keeping humans in the loop, as we've termed one of the three main messages of N100, entails keeping the human in decision-making in a time of progressive and fast-paced automation in defence, the labour market, mobility, the dawn of legal and financial AI automated reasoning and general fears of shelving human-centered control in favour of automated intelligent (artificially)

control in making decisions and electing strands of strategy. On the one hand we must consider the reasonability of automated decision-making and control, keeping in mind the programming is designed, built and controlled by humans, and on the other hand the option of electing some decisions to *actually* be made by the AI. This is a particularly fragile topic in defence and security.

Extracted from NATO's 'Human-AI Cooperation to Benefit Military Decision Making' of Karel van den Bosch and Adelbert Bronkhorst:

"Military decision making takes place in [a] variety of complex domains (defense, security, cyber, etc.). Artificial Intelligence not only allows for data reduction and synthesis, but also for the development of predictions about future events, and about outcomes to considered interventions. However, due to the often uncertain circumstances and ill-defined problems, AI cannot yet do this autonomously. Instead, deriving decisions from predictions and analysed data should be organized as an interactive human-technology activity, in which both parties become aware of one another's strengths, limitations, and objectives. How [should] humans and AI-systems should cooperate to achieve better decision making[?] It is argued that situation judgment can be improved through interactive explanatory dialogues, and that well-chosen explanations will support judgments and goal setting. An AI-system should be able to adapt itself dynamically to the decision maker, by taking into account his objectives, preferences, and track record (e.g. susceptibility to bias). Furthermore, this approach also contributes to 'trust-calibration': a level of warranted trust in each other's competencies. It is proposed to discern different stages in human-AI collaboration, ranging from one-way messaging to actual teaming. Ideally, AI-systems should be able to function as intelligent team players, but also at lower levels of collaboration, human-machine performance can be substantially boosted." (NATO, June 2018)

Exploration and forward-thinking are amazing qualities humans have always possessed. Looking at the future in terms of opportunities rather than challenges is what drives positive progress, ensures the path is designed in our image and often as a result, manifestation or expression bypasses or solves potential unformulated problems that may or may not externalise themselves in the future. However, visualising potential yet non-existent problems that may appear in the future, and prioritising solving those yet-unmanifested challenges robs us of the privileged and completely realistic opportunity and ability to craft, construct and accomplish a human-centric future.

Key Questions:

- ❖ What are current existing initiatives bridging the gap between the realms of technology and science & the social sciences?
- ❖ How to avoid misunderstanding and misinformation about the abilities, impact and use of technology?
- ❖ How to ensure the center of control is human? Who makes these strategic programme decisions?
- ❖ What are the opportunities for using advanced technologie, digital tools and the process of digitalisation in the domains of the social sciences?