



A Mission for Europe: Empowering a Multilingual Continent Game Changing Technologies for Language Equality

Brussels, 26 July 2018

Dear President Juncker,

The Language Technology community of Europe is calling for a sustained EU investment in Language Technology to ensure that Europe plays a leading role in the ongoing cognitive revolution. Multilingual capability is essential for all European citizens, to enable them to participate fully and as equal players in global society and business, in the single market and to benefit from Europe's rich cultural heritage.

Language Technology¹ is the most important driver behind the current boom in AI. As MIT's Josh Tenenbaum brings it to the point "***There's no way you can have an AI system that's humanlike that doesn't have language at the heart of it***". Language Technology redefines the interaction between humans and machines. According to most forecasts, AI will transform over the next years every domain of industry and society, from construction & manufacturing to commerce & retail, education & healthcare to legal & finance, defence & security to entertainment & tourism, etc.

Today, human-machine interaction still works mostly through inputs via mouse and keyboard and outputs generated via displays. Tomorrow, human-machine interaction will be mostly voice-based, with input and output to be spoken, i.e. language processed and understood by intelligent devices and robots. Most developments and products in this game-changing field are in English, with other languages barely or not supported at all. However, Europe is mostly non-English speaking.

If we do not act now, most European citizens will be excluded from the wave of digital transformation ahead of us. The race is on with the US, China and others and Europe cannot afford to fall behind in this strategic field. EU action appears all the more urgent in the light of investments by DARPA and ONR in the USA, the \$100bn Tech investment launched by Japan's Softbank and China's recent decision to endow a Tech Fund with \$15bn.

¹ Also known as Natural Language Processing (NLP), Natural Language Understanding (NLU) and Natural Language Generation (NLG)

Truly empowering a multilingual continent would require that the following core capabilities become available in all European languages:

1. Speech input (what is the user saying)
2. Natural language understanding (what does it mean)
3. Core multilingual AI (allow the machine to search, question, act)
4. Natural language generation (convert output of multilingual AI into text)
5. Text-2-Speech (speak texted result back to user)

Europe has a world-class scientific and entrepreneurial base in these domains which it has nurtured and developed over the last 70 years. Today, AI-empowered LT 'Language Intelligence' represents roughly a global aggregate turnover of €50bn p.a. It is set to grow very fast over the next years: a doubling of its global aggregate turnover is predicted for 2023².

The EU needs to strengthen and valorise these assets through a sustained investment. Language support is an infrastructural venture. Private industry cannot deliver the long-tail of smaller European languages. Even the US internet giants offer their disruptive products for a few of the *larger* languages only.

In conclusion, Language Technology is not only essential to guarantee the survival of all European languages in the digital world and a prerequisite to bring about a digital single market without language barriers, but it is a *sine qua non* enabler for the Language Intelligence-driven cognitive revolution.

We urge you to include **Empowering a Multilingual Continent** as a core 'Mission' for Horizon Europe.

Yours sincerely,



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² According to recent statistica and Tractica market forecasts, , the total market size of the language service and LT-driven AI software market is expected to be worth over USD 100 billion by 2023