ARTIFICIAL INTELLIGENCE AND BIG DATA

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ABSTRACT

Artificial intelligence (AI) interests the study and development of intelligent machines and software. The related ICT research is highly technical and specialized, and its central problems include the development of software that can reason, gather knowledge, plan intelligently, learn, communicate, scent and Manipulate objects. It also allows users of big data to automate and enhance complex descriptive and predictive analytical tasks that, when performed by humans, would be extremely labor acute and time consuming. Thus, unleashing AI on big data can have a significant impact on the role data plays in deciding how we work, how we travel and how we can conduct business.

KEYWORDS

Big data, artificial intelligence, parallelization

INTRODUCTION

The uptake of this trend can benefit companies as well as the economy and labor market, as the development and management of AI requires highly skilled workers in a variety of disciplines. More specifically, AI will lead to an increase in demand for skilled labor, particularly for computer scientists and mathematicians. Furthermore, as AI developers aim to have software function in the same way as the human brain,

knowledge on how the brain works will likely become more important and will spur research in the area. Big data describes the rapid growth, availability and utilization of information in today's world scenario. The continuously rise in volume of structured and unstructured information, the variety of it, and the speed with which it is generated, through social media, sensor data as well as transaction data, poses today's leaders and specialists with both increased opportunities and devilish challenges. With big data benefitting from raised storage capabilities, thinking moves away from what records to keep to contemplate the question of how to make sense of these large volumes of data.

Table : Examples of the various sectors for artificial intelligence on big data

Company	Sector of Big Data Market	Client Sector
Path Intelligence	Software / Services	Retail, transport, human logistics, entertainment venues
QlikView	Software / SAS / Services	Large variety of sectors, including automotive, health care, education, and banking
Expertmaker	Software / SAS	E-commerce
CogniCor	Software / SAS	Telecom

THE BENEFITS OF ARTIFICIAL INTELLIGENCE

Artificial intelligence can give unexpected business intelligence for a firm, enhance knowledge of their customers and improve customer interaction with the another firm, and in some case even replace whole departments as intelligent, learning machines performing tasks until now strictly reserved for humans. Not surprisingly, demand for solutions made possible only by artificial intelligence that is increasing in the private sector as well as in the public sector.

Mapping 3D visitor journeys to generate data-driven insights into visitor and customer behavior - Path Intelligence has developed Footpath technology, which combines data from multiple sources to analyze and predict consumer behavior. Tapping into spatial data from mobile phones and purchasing data from points of sale, and combining this with other data sources, Footpath looks for meaningful patterns to predict consumer behavior. This can be used to reposition goods on shop floors to increase sales or to relocate stores within malls to increase traffic, but also to change the layout of train stations and stadiums to improve human logistics by allowing for shorter transfer routes and better access to emergency exits

Delivering associative business intelligence that empowers business users by driving innovative decision-making - QlikView works the way the mind works. QlikView is a leading business discovery platform that enables users to explore big data and uncover insights that enable them to solve business problems in new ways. With QlikView, users can interact with data associatively, which allows them to gain unexpected business insights and make discoveries like with no other platform on the market. Large organisations can have a tendency to hoard large amounts of data without understanding why they would

need specific data, or how they could use it to their advantage. Regular database analytics can help these organisations retrieve specific data and analyse it along predetermined paths. This can leave interesting opportunities for data analysis untouched. QlikView aims to help users get more out of big data.

Path Intelligence is a British technology company that was founded in 2004 and is headquartered in Portsmouth near London, UK, and has offices in London, New York and San Francisco (USA).

Innovative solution – Expert maker's goal is to make the internet more intelligent by making it easy for companies to add artificial intelligence to their services and apps. Expert maker's AI server is a cloud-based high-speed computational AI server for running their artificial intelligence solutions. It offers very fast performance for live operations with its distributed architecture and parallel computation hardware. Most clients of Expert maker are ecommerce companies, companies that sell products and services online. E-commerce is a highly competitive sector, and Expert maker helps their clients in e-commerce to make their online interactions with their customers more intelligent and more precise. In this way, Expert maker helps e-commerce companies increase their sales. By guiding customers better though their online content, and presenting them with more suitable offers and suggestions, the clients of Expert maker can offer their customers an interaction experience that is similar to asking questions to a flesh-and-blood sales person helping to find gift ideas.

DIFFICULTIES

The development of artificial intelligence for big data in Europe has specific drivers and faces several obstacles. These drivers and obstacles impact both technology companies developing solutions and companies looking to implement artificial intelligence. Drivers include a highly educated workforce, scalability of developed solutions and public support programmes fostering innovation. Obstacles include the difficulty of attracting funds both when setting up a technology company and when early financiers look to divest, high administrative burdens for small companies, and unfavourable taxation.

Artificial intelligence, a knowledge intensive industry Artificial intelligence technology companies often are founded in areas close to a university and in proximity to other technology companies . CogniCor is based in Barcelona, the location of the organization it was spun-out from. QlikTech and Expertmaker both are located near Lund, a technology region that is home to the Lund Institute of Technology as well as companies such as Ericsson and Sony. Path Intelligence is established in Portsmouth, close to the University of Portsmouth (previously known as Portsmouth Polytechnic) and home to the headquarters of both IBM Europe and the bulk of the British defense industry.

CONCLUSION:

Access to funding – Artificial intelligence technology companies face difficulties finding early stage funds for researching their technology and developing prototypes, and suffer the 'valley of death' when early investors opt to divest while long-term investors remain disinclined to take on the risk.

• Tax system that promotes innovation – Early-stage start-ups find the tax burden heavy, and could benefit from tax holidays to focus their scarce funds on technological development. Similarly, they would like to have more possibilities to reward their staff with equity without negative fiscal consequences.

• Public procurement of innovation – As artificial intelligence technology is cutting-edge, proof-of concepts and cost-benefit analyses are not easily construed, which can lead to interested companies to postpone or reconsider making any deep investments, especially in the current economic climate. Public procurement of innovation could provide for proof-of concepts and show good practices to incorporate in cost-benefit analyses.

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