

Workplace Analytics in the Neural Network Economy

Necessity was the Mother of Invention

It is not by accident that advanced analytics have become increasingly similar to the process that occurs within the human nervous system as computer networks rapidly interconnected people individually, socially, organizationally, and systemically. Researchers in overlapping areas have long recognized the value of biological neural networks; an understanding that has recently matured to the point of applying biomimetics to many products and systems.

Unlike naturally occurring neural networks, however, artificial neural networks in the work environment involves interaction between individuals, groups, and organizations within our highly complex species across distributed environments in all jurisdictions and cultures. Effective workplace design in neural networks must therefore consider a range of issues in addition to mathematics, logic and physics required in computer science; including economics, natural language, regulatory, security, incentives, individual personalities, individual and group cultures, privacy, perceptions, fear, trust, greed, compassion, habits, bias, variance of cognitive abilities, motivation, intention, ease of use, and power of choice, among others.

IT systems need to be continuously adaptive to constantly changing conditions in a physical and economic environment that has long-favored commoditization and high-end customization, neither of which are consistent with the differentiation and diversity needed for functional market economies. The ability to manage complex relationships between entities in the computer network environment given conflicting needs of each was an exceptional challenge.

While individual disciplines involved within this highly complex environment are essential for researchers and system architects to understand in detail, it is more important for senior executives and boards of directors to understand how each can be collectively integrated into system design for achieving tactical and strategic objectives. Otherwise decision makers may be subjected to the conflicts and bias advanced workplace systems are designed to overcome. This challenge has been met with an attempt at cart-or-horse humor by suggesting that functional governance systems must be installed before organizations that need them can be in a

position to make an informed decision to adopt functional governance systems. The irony is that evidence over many millennia clearly demonstrates that effective governance systems are required in all organizations in any environment. Organizational cultures suffering from poor workplace analytics and governance failures are notoriously skilled in crafting defensive measures against attempts to install accountable systems, illustrating the need for board-level leadership and regulatory enforcement, particularly for critical situations.

While artificial neural networks have strengths and weaknesses in comparison to traditional environments, computer system design is far more complex and important. Semi-automated processes must be designed with great care to ensure proper governance, remove disincentives, and foster higher levels of innovation and productivity. Fully automated environments are even more critical, for decisions must be made on what to automate when, under what conditions, and how to design for both intended and unintended reactions.

We live in an era when the direction of global financial markets, military actions, consumer choice, and business operations are increasingly based on predetermined criteria with triggers in near real-time. The accuracy of predictive analytics, structural integrity of governance systems, productivity of knowledge workers, ability to innovate and adapt to changing conditions increasingly determines the fate of economic entities of all types, configurations and size. Workplace analytics in the neural network environment and economy is no longer a topic organizations, policy makers or regulators can afford to ignore. The sustainability of our planet and future of our species may well depend on getting this right.

