

Digitalized Finance: Informatization at the Service of Financial Dominance

4.1 The State of the Art of Digitalized Finance at the Beginning of the 21st Century

Remember that time is money [...]

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When we think of the stock exchange, the first thing that generally springs to mind is a mass of people carrying mobile telephones and incessantly shouting at each other about share purchases and sales, whilst they look anxiously, with expressions of euphoria or panic, at screens that quickly relay price information and quotes. In fact, this image, practically a metonymy of financial capitalism established in photo, television and cinema coverage, hardly exists anymore. Now silent, the physical space at the stock exchange, just like the people who previously shouted on their floors, have little or no practical function. Trades now take place on powerful computers and in data centers that are operated 24 hours a day throughout the world. Instead of the old criers, buyers and sellers of stocks, there are physicists, astrophysicists, mathematicians and economists trained at the world's most prestigious universities who design algorithms and automated business strategies that are to be implemented in speeds of milliseconds. The "animal spirit" of the markets, free from many of its material bonds, today runs along incredibly high-speed fiber optic transmission lines. This important change occurred thanks to the advance of the Information and Communication Technologies that have taken place, mostly, over the last two decades.

Since the beginning of the 1980s, a moment that, as we have discussed, marks the acceleration of the process of structural economic transformation defined as financial globalization, this advance in technological development, in relation to the capitals markets, has basically followed two main tendencies: (i) large-scale investment in the construction of systems for the production and circulation of information in real time; and (ii) the production of means

¹ Franklin 1736 *Apud* Weber 2004, p. 42.

capable of allowing trades to be made simultaneously in different markets as fast as possible.

To cite two examples of business models that became paradigms for these two respective tendencies: it was in 1981 that Michael Bloomberg, at the time a fired Wall Street broker, founded the company Innovative Market Systems, later renamed with his surname, to compile and present financial information on terminals (systems visualized on monitors) for companies, banks and brokers, and to use this technology to make electronic trading on fixed income commercial papers. These days, the communications conglomerate Bloomberg is one of the biggest in the world, a leader in its field of commercialization of information and data for the financial market.² One year later, in 1982, having worked from various universities and for the US intelligence service, the renowned mathematician James Simmons opened Renaissance Technologies, a financial resources administration firm that believed in the use of complex mathematical models processed on computers to locate inefficiencies in high-liquidity securities. By means of this strategy, the company now administrates the biggest and most profitable hedge fund³ in the world.

These days, the radicalization of this process points to the joining of these two dimensions into a single unit, or in other words, the complete integration of production and circulation of information at different levels with automatic high-speed trading on the markets, by means of the highly intensive processing of data in increasing volumes, varieties and complexities, structured in chains of significance, with the assistance of high-performance computation within what is generally referred to as Big Data.

2 Defining itself as news agency and compiler of financial and economic data for monitoring the market, Bloomberg now has more than 12,000 employees around the world (including mathematicians, physicists and astrophysicists) and has been operating in Brazil since 1998. This international giant's system for the financial market synthesizes more than 500,000 news items per day and offers its own reports, studies and analyses. As well as allowing trades to be performed in seconds, directly from its information platform (in a manner that is automated and high-frequency, depending upon the needs of the clients), it offers a chat system in which all those subscribing to the platform around the world (around 350,000, amongst which are Ministers of state and directors of large banks, and state and private companies) can be contacted directly. Each of these systems, called "Terminals", can be leased for US\$2,000 per month, this being a business model used other companies such as Reuters and Agência Estado in Brazil. In 2013, a Bloomberg publicly accepted the accusation that it had improperly used its clients' business information. For more on this visit <<http://www.nytimes.com/2013/05/13/business/media/bloomberg-admits-terminal-snooping.html>>. Accessed on: Nov 28, 2017.

3 Highly-speculative high-risk investment fund, with few restrictions, that simultaneously combines currency transactions, shares, commodities and securities.