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ISSUES ON FINANCIAL MARKET REGULATION, BUSINESS DEVELOPMENT AND GOVERNMENT'S POLICIES ON GLOBALIZATION

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The "Law and Economics Yearly Review" is an academic journal to promote a legal and economic debate. It is published twice annually (Part I and Part II), by the Fondazione Gerardo Capriglione Onlus (an organization aimed to promote and develop the research activity on financial regulation) in association with Queen Mary University of London. The journal faces questions about development issues and other several matters related to the international context, originated by globalization. Delays in political actions, limits of certain Government's policies, business development constraints and the "sovereign debt crisis" are some aims of our studies. The global financial and economic crisis is analysed in its controversial perspectives; the same approach qualifies the research of possible remedies to override this period of progressive capitalism's turbulences and to promote a sustainable retrieval.

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FOCUS ON GLOBAL PERSPECTIVES

IMPACTS, CHALLENGES AND TRENDS OF DIGITAL TRANSFORMATION IN THE BANKING SECTOR

Richard Baskerville [*] - Francesco Capriglione [**] - Nunzio Casalino [***]

ABSTRACT: *Driven by the 2020 pandemic's work-at-home mandates, the future of work in banking and finance may be in the midst of disruptive change. The digital transformation process of banks sees the development and strengthening of digital channels as one of the first and most important stages, without prejudice to the importance of the physical channel for specific needs. On the one hand, this duality between digitization and the human factor is reflecting in the multichannel strategies of the banks, which are increasingly moving towards a synergy between digital channels and human touch. On the other hand, a thorough review of customer service logics leads banks to review the operation of internal processes, introducing elements of innovation through structured work paths that lead to the construction and management of an innovation strategy. Accordingly, society wide trust in the use of digital instruments and processes in finance has bounded forward. Artificial intelligence, machine learning, big data analytics, blockchain ledgers, digital money, and myriad digitally developed financial derivatives are losing their mystery both inside and outside institutions and companies operating in banking and finance. The 2020 year repre-*

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This article is the result of a joint study by the authors and all paragraphs can be attributed to each for their own research field.

sented a major watershed between the world before and after the pandemic. The health emergency, in fact, has profoundly changed people way of living, relating, working, training and make financial operations. The year 2021 will be decisive for the integration of digital technologies in the banks, changing both the degree of centralisation / decentralisation of decisions and the management of information and knowledge. As a result of both the economic crisis and more restrictive regulation, the bank's top management has become very sensitive to having everything more directly under control. The organizational pyramid has consequently to be simplified and flattened. The disruptive growth of societal trust in digital banking and finance could accelerate to achieve higher levels of efficiency, requiring the bank to learn, develop new knowledge and innovate, in order to achieve the necessary condition for its vitality in a competitive environment.

1. The need to initiate a rapid and adequate recovery of the banking sector (which is currently experiencing some economic and financial imbalances subsequent the pandemic crisis) can be supported by the simplification of processes and the consequent savings that are achieved by using technology with different solutions, suited to the various needs that are to be satisfied. The transition from "analog to digital" is at the centre of this reality, allowing the streamlining of workflows which is achieved through the automation of activities; hence a profound innovation of procedures, linked to the production and distribution of products and services, which underlies a new method of managing administrative, accounting and tax document

flows[1].

Digitizing operational models means activating the possibility of adapting and optimizing processes[2] by making use of data that can be inferred from intelligent analyses and with limited margins of error. In particular, the prospect of an activity able to generate profiled databases, intercept potential customers and retain those already acquired is outlined. Added to this are the gains in terms of efficiency, speed, and full control of the data flow; and indeed, dematerializing the physical space, also intended as a digital archiving and storage system, means realizing a significant economic saving that takes the form of replacing paper and stand-alone computer systems, with advanced digital repositories to store, update and share documents and multimedia content.

This, considering a better management of company channels aimed at persistent market analysis, allows a complete and single administration - built in relation to the behaviours, preferences, and actions of users both online and offline - which creates value. data, as well as higher levels of transparency. It can be deduced from this that the introduction (and the affirmation) in the banking market of advanced information systems offers the opportunity for an assessment of credit risk in an aggregate form, which positively interacts with the verification of creditworthiness. The prerequisites for greater consumer protection are also identified and, therefore, for a strengthening of their role "as an agent (and no longer a 'reactant')" in determining one's decision-making process[3]; it emerges an underlying rationale of rebalancing the position of the consumer as a structurally weak party.

Therefore, the specificity of the process in question translates into an efficiency of the sector which implies a transformation of the same, realized through systems governed by innovative technologies and artificial intelligence. Further, the in-

[1]CAPRIGLIONE & CASALINO, *Improving Corporate Governance and Managerial Skills in Banking Organizations*, International Journal of Advanced Corporate Learning (iJAC), Austria, vol. 7, issue 4, pp. 17-27, 2014.
[2]ALPA, *Il mercato unico digitale - The digital single market DSM*, Debates, Contratto e Impresa / Europa Journal, 1/2021.
[3]DAVOLA, *Algoritmi decisionali e trasparenza bancaria*, UTET, Milan, p. 55, 2020.

credible amount of data and feedbacks, which are generated thanks to the presence of the latter, constitutes a complex of useful information that allows to improve the products and services to be rendered to customers; hence a first beneficial effect (which affects the reality of the market) represented by a strengthening of the fiduciary bond of the latter towards the qualified parties. In addition, the emergence of digital technologies involves a change of mentality that leads banks to a critical review of their current organizational structure and, therefore, to identify appropriate strategic lines aimed at achieving the essential objectives that they propose.

From another point of view, it highlights the fact that the change, induced by digitization, also involves the relational forms that characterize the production processes; it involves, in fact, the dematerialization of physical places, to which is added the sharing of information in real time, the possibility of working, even remotely, in a single connected and collaborative environment. Hence the new participatory methods that favour activities that can take place in spaces that are not limited and can be managed remotely (from online meetings to customer assistance via chat, to interactions on IT platforms), with the same level of effectiveness as those up to now delivered onsite.

Naturally, the delay that, at present, characterizes the digitization process of the Italian credit sector in some operational areas, gives a glimpse of certain difficulties for intermediaries in carrying out the transition in question, which - at least in the initial phase - will encounter obstacles of various kinds due to the lack of familiarity with the use of management tools and decision support even in the definition of development strategies. It will be the acquired awareness of the advantages of digital, obtained through experimented operational forms that make use of the latter, to give an adequate impulse to what we could define a “genetic mutation” of the sector, overcoming any attitudes of closure and the delays that may be found.

Companies can be helped in identifying the strategies to be followed by external professionals, capable of identifying the critical issues, establishing the urgencies and the objectives in progress on the basis of the various automated systems offered

by the market; if necessary revisited in the light of the purposes pursued, for this purpose by identifying the most suitable software and solutions, researched by subjecting them to a convenience screening. The work of these external consultants can facilitate the understanding of the specific needs of the company and based on these, recommend customizable technologies.

In this renovation work, basic functionalities may be necessary, to solve certain inefficiencies that emerged during the analysis phase, or more complex and ad hoc applications, or even management systems to be integrated with the pre-existing ones.

Naturally, in the face of the activation of such a process in the banking sector, a similar digitization will have to correspond to the entrepreneurial system which avails itself of the financial support of credit institutions. This need is particularly felt regarding SMEs, manufacturing, and service supply companies, which, in a context marked by automation, if they do not adapt even by accepting the digital transformation, could cause delays and severe "deadlock" conditions, which certainly would benefit from their prompt recovery.

2. Elaborating the meaning of digital transformation in its many aspects, allows clarity on priorities and objectives, based on a preventive analysis of the most urgent problems to be solved and on new sustainable short and long-range goals. This, of course, by comparing data from other countries and questioning a wide range of important economic issues in order to arrive at a micro and macroeconomic verification of productivity.

Therefore, the structure and operational dynamics, the division of labour, the value chain and the appropriation of value will have to be assessed. The related data will have to identify the effects of technological change[4], the role of investment policies for innovation and the implications of competitiveness in techno-

[4]DAFT, Organization Theory & Design, Cengage Learning, 2020.

logical transformation. From a general point of view, the tools with which the policy intends to intervene should be explored to help banking companies in facing the challenges posed by technological change; similarly, the role played by the supervisory authorities assumes particular importance, as they, with the adoption of specific regulations, could favour or condition this transformation process.

It is evident that we are in the presence of a reality that is difficult to define, also because it is the same corporate digitalization that pushes the banking market in a direction characterized by a continuous development of innovative processes, which will require ever-changing skills and will expose companies in the sector to costs destined to grow over time. This introduces elements of uncertainty in the evaluations of the decision-making bodies of the latter, forced to identify complex programmatic lines to avoid the unknown factor of a sudden halt in their development plans[5]. Hence a complex problem that involves many aspects: from the protection of competition to the management of data in a to-be perspective, to the dimension of the choices made taking into account their opportune profitability.

Naturally, a differentiated framework is envisaged by territorial area and by type of digitization processes adopted, which are affected, on the one hand, by the availability of large investments, and on the other by the execution times that are prefigured. The traceability to the strength of the corporations involved in these significant system changes gives the measure of the difficulties that must be overcome in order to reach acceptable results in a short time. It is clear that the investigation must be centred on the critical areas to be "remediated", following a strategy focused on the essential objectives and on the technological tools to be used based on their functionality.

In this context, the analysis must then distinguish the corporate reality start-ups of the recently established from that of medium-sized enterprises of not recent origins; the former are immediately projected towards digital progress, in the face of

[5]The digital market is expected to be driven at least until 2020 by the ICT solutions (Assinform, 2018), which have an average annual growth ranging between 5% and 7%.

the latter which will have to overcome the complex phase of change by abandoning the use of traditional tools (client-server systems centralized onsite, fax, documentary archives of evidential value mainly on paper[6], of uncoordinated internal and external communication, unsecured registers and repositories, etc.) and, therefore, the use of manual data entry operations for which the risk of errors and incompleteness is considerable. It is evident how the process in question affects the workflows[7], avoiding a waste of energy or stalemate conditions in the same manner; hence the prospect of a review of the current structure of the banking sector which presumably should show more and more interest in the topic of smart working. This will result, as mentioned above, in an analysis of the critical areas and in the search for new strategies and technological tools which, at present, are not yet well configurable as they are linked to the affirmation of skills not yet defined. in their explanatory essence, being profoundly different from those currently practiced, focusing on classic IT products and services.

From the above it is clear that the new "modus agendi" is preordained a leave nothing to chance or approximation from which the priority needs to innovate business models, now linked, more than in the past, to the identification of parameters and IT infrastructures capable of providing the most appropriate solutions in terms of utility operational and economic convenience.

To this end, it will be necessary for intermediaries to follow an "integrated and systemic approach in the renovation work to be carried out internally that emphasizes not only what ... (we are called upon) ... to do ... but above all how to do it"[8]. It is true that economic science has for some time highlighted the connection of this

[6]CASALINO, ZUCHOWSKI, LABRINOS, MUÑOZ NIETO & MARTÍN-JIMÉNEZ, *Digital strategies and organizational performances of SMEs in the age of Coronavirus: balancing digital transformation with an effective business resilience*, Law and Economics Yearly Review Journal – LEYR, Queen Mary University, London, UK, vol. 8, part 2, pp. 347-380, 2019.
[7]BULLINI ORLANDI, RICCIARDI, ROSSIGNOLI & DE MARCO, *Scholarly work in the Internet age: Co-evolving technologies, institutions and workflows,* Journal of Innovation and Knowledge, 4(1), pp. 55-61, 2019.
[8]SUPINO, *I modelli di business nei settori ad alta innovazione*, final dissertation, Luiss University, p. 24, 2011.

model to the innovation of processes and products, hence the reference to the efficiency guaranteed by the former and to the profitability allowed by the marketing methods of the latter[9]. There is also the need to release the new operating forms of banks from the limited areas of technological development in-house in order to derive from the comparison possible competitive advantages with skills developed in different locations.

Therefore, the possibility of establishing a very deep link between the product market and the market for strategic factors is taken into consideration[10]. And indeed, the model business chosen requires not only the analysis of reliable alternatives, but also the collection of the data necessary to support the managers' intuition regarding the positioning of competitors, the reactions of the latter and the needs of the buyers.

On this point, it can be said that a business model that takes advantage of the possibility of combining digital technologies with financial services is also able to avoid the dangerous competition that FinTech companies will be able to exercise in the future. These, as is well known, are increasingly present on the markets, carrying out functions that involve credit activities, payment services and technologies supporting banking and financial services, that is to say tasks that, up to now, have been normally typical of credit intermediaries[11]. Hence the unavoidable need of banks to be able to cope with the entry into the markets of start-ups technological, which - using modern IT tools and the uncertainty of the reference regulatory framework - could constitute a valid alternative to them[12].

[9]GAMBARDELLA & MACGAHAN, *Business Model Innovation: General Purpose Technologies and their implications for Industry Structure*, Long Range Planning, 2009.
[10]SILVESTRELLI & BELLAGAMBA, *Creazione del vantaggio competitivo dell'impresa nella strategia a livello di business*, in Fattori di competitività dell'impresa industriale. Un'analisi economica e manageriale, Giappichelli, 2017.
[11]TROIANO*, Fintech tra innovazione e regolamentazione, national conference «Fintech: prime esperienze e prospettive di regolamentazione»,* Rome, Università La Sapienza, 2017.
[12]BANCA D'ITALIA, *Fintech in Italy.* Fact-finding survey on the adoption of technological innovations applied to financial services, 2017.

3. In the presence of a significant change in the contents of the banking business, a rethinking the systemic structure of credit supervision is also necessary, considering that the legal order of the market must comply with the innovative processes that have profoundly changed the operations of members of the sector[13].

The analysis must be oriented in the first place to the research of the modalities with which the Supervisory Body places itself in relation to the operational paradigms suitable for ensuring that the ganglia of the regulatory system include a series of phenomena that to date escape the attention of the legislator. This obviously requires a detailed survey of the economic and financial fabric on which action is taken, given the primary purpose of filling regulatory gaps that undermine competitiveness and expose the stability of the system to risks.

More specifically, the supervisory authority will have to carry out a qualitative / quantitative verification of the information acquired regarding the possible exposure to "credit risk" of the banks engaged in loan transactions. Hence the specificity of the role now ascribable to the Control Body, consisting in a renewed ability to synthesize the results emerging from the analysis of the data in its possession. Naturally, for this purpose it will be necessary that the structures of the authorities in question (European and national) comply with the canons of the digitization process, eliminating the use of traditional information tools (non-networked and interoperable systems, e-mail, paper documentation, absence of standardized procedures, etc.) which still occupy significant space in their operational processes.

Faced with the affirmation of the technological paradigm, the essential role of function supervision remains, aimed at preserving the safety and solidity of the financial system and, consequently, at ensuring the safeguarding of savings and the correctness of credit operations. What changes are the methods of carrying out this function, which - thanks to the use of decision-making algorithms - should tend towards greater objectification of the forms of intervention, hence a desirable resizing

[13]ALPA, *Il mercato unico digitale - The digital single market DSM*, Debates, Contratto e Impresa / Europa Journal, 1/2021.

of the discretion that often characterizes its essence and, therefore, the overcoming of particular constraints in the past imposed on members of the sector.

From another point of view, the simplification of the verification activity that characterizes the supervision is considered, which can be configured following the application of automatic credit risk assessment systems in aggregate form and, therefore, of the new tools based on the use of advanced specific algorithms for creditworthiness processing. The latter, in fact, make it possible to make use of "variables of analysis through the use of big data analysis and the use of techniques such as knowledge discovery in this way, making up for the shortcomings of the traditional system"[14]. The processing of such data facilitates the simplified reading of the information elements, so it is possible to obtain a risk profiling of credit applicants which helps in carrying out the activity that is the responsibility of the sector authorities.

There is, therefore, a sort of physiological mutation of the supervisory activity in which, without prejudice to the reference to the canon of "sound and prudent management", as the founding criterion of this function, the interventional paradigm changes on the level of concreteness, which will be increasingly oriented to the use of mechanisms that make it possible to objectify the evaluation processes. It resizes, therefore, the 'discretion' which, since ancient times, has characterized the strategy of the sector authorities such as the European Central Bank (ECB) and the Federal Reserve System (FED). There is less possibility of having recourse to informal persuasion techniques (moral suasion), intended to be replaced by a' more pervasive action which, in the face of the results of certain checks, directly interacts with intermediaries.

In this context, it will be possible to witness the adoption of disciplinary measures which, while responding to the aim of facilitating the digitization process, subvert certain ordering principles that have traditionally characterized the credit

[14]DAVOLA, based on LEXIS NEXIS, *Alternative Credit Decision Tools: Auto & Credit Lending. White Paper,* p. 136, 2013, available on *https://risk.lexisnexis.com/insights-resources/white-paper/alternative-credit-decision-tools.*

sector; this with an obvious negative impact on the national situations on which these measures impact. We refer, in particular, to the line followed by the ECB and FED to favour the large banking dimension.

In this regard and indeed, the president of the Supervisory Board of the ECB, Andrea Enria, recently argued that banking combinations in Europe serve to restore profitability to the sector, reduce excess production capacity, accelerate the revision of IT systems, develop new technologies, rationalize the branch network[15].

An orientation is envisaged that, in countries such as Italy, could determine a disconnect between the financial reality (represented mainly by large banks that are part of aggregations requested by the authorities) and the entrepreneurial system (consisting of a significant number of SMEs). The thesis supported by Governor Visco, according to which "for many intermediaries the limited size, together with their prevailing specialization, often does not allow to make the necessary investments in technology, innovate products and processes, exploit economies of scale and diversification"[16]; thus, reaching the denial of the principle pluralistic that has always characterized the Italian banking system.

4. The digital transformation process of banks sees the development and strengthening of digital channels as one of the first and most important stages, without prejudice to the importance of the physical channel for specific needs. On the one hand, this duality between digitization[17] and the human element[18] is reflected in the multichannel strategies of the banks, which are increasingly moving towards a synergy between digital channels and human touch. On the other hand, a thorough review of customer service logics leads banks to review the operation of internal pro-

[15]Editorial issue *Banche: Enria, aggregazioni servono sempre non solo in questa fase,* available on *www.ilsole24ore.com/radiocor/nRC_28.07.2020_10.27_20810208.*
[16]Public relation of ABI (Italian Banking Association), September 2020.
[17]BOCCARDELLI & IACOVONE, *L'impresa di diventare digitale. Come la rivoluzione tecnologica sta influenzando la gestione di impresa*, vol., Il Mulino, 2018.
[18]KEHOE & WRIGHT, *The impact of high-performance human resource practices on employees' attitudes and behaviours*, Cornell University, 2013.

cesses, introducing elements of innovation through structured work paths that lead to the construction and management of an innovation strategy. The 2020 year represented a major watershed between the world before and after the pandemic. The health emergency, in fact, has profoundly changed our way of living, relating, working, training and is also impacting shopping habits, increasingly aimed at the digital world. The year 2021 will be decisive, although full of unknowns: if the crisis were to be resolved, at least in part, we will begin to see which aspects of the new normal will influence the future, while if it continues, companies and other social actors will have to find further solutions to face it. One thing is certain: starting from the year 2020 the digitization process of companies has had unprecedented momentum. Growth involved all economic sectors in different ways. Even if the future is still uncertain, it is useful to take stock and understand what the consequences of the digital transformation have been, taking into account its peculiarities[19].

The banking and financial sector transformed during the pandemic, even acquiring a name that now circulates in newspapers and information sites: fintech, a union between technology and finance. Financial institutions have been able to continue to operate and offer innovative solutions thanks to digital. The banking sector is one of the most innovative of the moment and will evolve further in the future as well.

Emerging technologies, such as Artificial Intelligence, are further entering banking systems, allowing customers to meet their needs more quickly and effectively. For example, personalized home banking is now widespread, which thanks to the use of digital devices allows you to manage all the details of your account, financing, or other aspects of the contract remotely.

Customer service is already handled by bots, which strike up a conversation and help people, thus cutting waiting times. At the same time, banks have contribut-

[19]CASALINO, *Behavioural Additionality and Organizational Impact of European Policies to Promote Internationalisation of High-growth Innovative SMEs*, Journal of International Business and Economics, American Research Institute for Policy Development, USA, Vol. 2, No. 4, pp. 17-44, 2014.

ed to the spread of digital payments, such as contactless or payments via applications on mobile devices. Not to mention that, thanks to agreements with the public administration and other international bodies, they have made it possible to manage financing and loans in an increasingly effective way.

In the future, credit institutions will become "financial wellness partners", which means that they will not limit themselves to using technologies to meet customer needs but will use more and more data and artificial intelligence to propose personalized banking experiences, offer financial solutions based on the single. Some institutes are also starting to offer companies participation in tenders for SMEs linked to subsidized loans and the like, based on sector, size and other requirements. They will therefore be increasingly proactive in the financial management of people.

Covid-19 has given a decisive acceleration to the digitization of the financial and insurance sector, both from the point of view of the demand and supply of services: if Fintech has always been considered an opportunity, now it has also become a great necessity that can only make the system more efficient. But beyond the emergency, in the world there is an ecosystem[20] that moves decisively, between agreements and collaborations, to guarantee the customer a quality user experience for consumers, increasingly demanding on speed of response, ease of interaction, integrated and personalized services. For banks and insurance companies, start-ups and new innovative players are not only competitors, but subjects with whom to create important synergies[21].

The banking sector in recent years has recovered a lot in terms of digitization: being one of the most conservative sectors, the great diffusion of digital has inevitably had innovative effects, with all the positive consequences of the case. There are numerous major changes affecting the banking sector.

[20]PELLEGRINI, USKOV & CASALINO, *Reimagining and re-designing the post-Covid-19 higher education organizations to address new challenges and responses for safe and effective teaching activities*, Law and Economics Yearly Review Journal - LEYR, Queen Mary University, London, UK, vol. 9, part 1, pp. 219-248, 2020.
[21]COSTA, GUBITTA & PITTINO, *Organizzazione Aziendale – Mercati, gerarchie e convenzioni*, Mcgraw Hill, 2021.

5. The enormous success of digital banking represents the real turning point in the evolution of this sector: the progressive approach of customers to the banking world through digital tools such as smartphone apps and user-friendly platforms have in fact marked the end of traditional banks and the beginning of a new era. Furthermore, unlike what happened in the past, the typical customer does not have a single current account.

This happens because of the greater possibility of choice, different solutions are used according to one's specific needs: from liquidity to the management of one's savings, therefore, the answers are different from time to time.

Precisely with the aim of meeting more types of customers (young users in the first place), banking institutions are veering more and more in the direction of an innovation that makes simplification its strong point. For this reason, the products and services offered must also be accessible to those who have never used them: clear examples are the digital institutions that allow you to obtain loans in 24 hours, thus putting simplicity and speed in the procedures necessary for the first place. the request and, consequently, the customer experience. This simplification process is obviously bringing its advantages[22] to both sides: if banks manage to reach a greater share of customers, even those who use the services have a higher level of satisfaction, feeling this world less distant and cryptic, therefore closer to his daily needs.

Another fundamental factor in this perspective is the automation of a crucial aspect such as the relationship with the customer[23]. In fact, the application of artificial intelligence to customer care represents a way to support the customer at any time, thanks to the increasingly sophisticated and refined chatbots in terms of functionality.

[22]PORTER, *Competitive Advantage: Creating and Sustaining Superior Performance*, The Free Press, New York, 1985.
[23]CASALINO, PIZZOLO, PINEIRO, ZIELINSKI, SMATER, VASSILEVA, SEYKOVA, HAJDUK, VAGAS & TULEJA, *Transfer of Technology and Innovation to Increase the Competitiveness of SMEs*, Scientific Letters of Academic Society of Michal Baludansky, vol. 7, n. 1, pp. 23-27, 2019.

Of course, this does not imply the disappearance of the human component: the watchword in this sector is omni-channel, that is the presence on different channels, for a more effective and integrated contact with the customers.

If, thanks to digitalization, banks have improved their efficiency[24] by streamlining, centralizing, and cutting costs, it is legitimate to ask whether the resulting impact on the organization, corporate culture and skills is also conducive to increasing their capacity for innovation. In fact, it is not enough to aim for efficiency, the bank must also be able to be innovative and create new business models to adapt to environmental change. Therefore, it is necessary for it to learn because learning is an essential precondition for innovating. As for the possibility that digital technology replaces decision makers, the question concerns not only artificial intelligence but above all the future of so-called social physics which studies, on the basis of digital traces, individual and group behaviours.

However, it is doubtful whether the strengthened organizational-digital model can produce new knowledge. According to experts, machines are unable to produce it; in fact, they do not tell us what the direct links between cause and effect are. Statistical correlations do not explain these links or account for the underlying phenomena.

Therefore, thinking that digital transformation can eliminate intellectual work in the bank means not understanding that the bank, like any other company, cannot be managed as a mere "input-output" system; to grow and innovate it must be managed as a cognitive system and therefore its intellectual capital must be enhanced and developed. Apart from the emergence of a demotivating organizational climate and the disengagement of the staff reduced to increasingly fewer professional roles, not counting on intermediate management is just a way to reduce the ability to learn.

A staff far from the market is not certain that, also thanks to sophisticated dig-

[24]PFEFFER, *Seven practices of successful organizations*, California Management, 1998.

ital and information supports, it will be able to perceive and understand promptly the changes in demand, new opportunities, and competitive threats, which the structures in direct contact have. with customers. Also, the creation of centralized units with the task of dealing with innovation has the same limits if they do not interact and compare with the rest of the structure. Middle management has always represented a point of accumulation of knowledge given its functions as a link between centre and periphery as well as personnel management, and above all its strategic role of mediating between top management inputs and market feedback. Organizational theory excludes that a top-down management structure is modelled only on efficiency and an effective executive staff can develop a culture of innovation[25] and producing new knowledge[26].

For example, consider the creditworthiness assessment process. The creditors are no longer called upon to express their judgment but are replaced by statistical-mathematical models and credit scoring systems. In this way, for the assessment of credit risk, operators who upload the digital system with a defined set of data are sufficient when these do not flow directly to this system electronically. It is argued that an automated valuation model, in addition to being less expensive, evaluates objectively; but in reality, the bank risks moving away from the true knowledge of the customer and his actual financial problems because not all information, even the relevant ones, can be quantified, codified and transferred with digital procedures.

Consequently, banks are not only not certain to reduce information asymmetries towards customers, but also suffer an impoverishment of the skills and knowledge of their employees. In fact, by not interacting with the customer, they do not learn from the customer. Thus, real cognitive asymmetries are consolidated between the bank and the companies when the latter innovate, and often the bank remains outside the circuits of new knowledge.

[25]CORALLO, PASSIANTE & PRENCIPE, *The digital business ecosystem*, Edward Elgar Pub, 2007.
[26]KEHOE & WRIGHT, *The impact of high-performance human resource practices on employees' attitudes and behaviours*, Cornell University, 2013.

6. Digital technology has been at the heart of the change in the bank's organization for years. Many observers consider it the solution to relaunch business models in crisis but also the key to the success of the bank of the future.

In recent years there has been a lot of debate about whether we have entered a phase of transition to a change of era with digitalisation that is changing the way we think, act and our lifestyles. The issues on the table concern important issues such as the relationship between digital technology and quality of life, between digital technology and freedom, but also the anthropological scope of technological transformation and the possibility that problems can be solved with computers.

It is increasingly important to focus studies on the new organisational-digital models of banks that will increasingly be the basis of new banking governance. The ECB and the FED now recognize the usefulness of machine learning. It is therefore likely that we are at the beginning of a transformative path of traditional banking models although digitalization has accelerated in banks because of the economic crisis.

The issue of human capital and knowledge is part of this debate. The competitive capacity of a bank depends not only on its technological development, but also on the development of its intellectual capital. It is the latter that often unfortunately decrease the innovation. With staff cuts, traditional banking skills are being reduced because new entrants are chosen with predominantly technological skills. Therefore, the organizational digital model requires corrections and measures that restore and supervise the learning function of the bank with a view not only to the optimization of the existing, but also to a continuous innovation and exploration of new businesses.

This means less top-down management style[27], engagement, delegation, motivation and enhancement of middle management, creation of learning infrastruc-

[27]CICCHETTI, *La progettazione organizzativa*, Franco Angeli, Milan, 2004.

tures, review of operational roles, sharing of knowledge.

If we look at the economic and social impact in EU and USA, the concentration in a few hands of large volumes of data collected through digital tools, which allow acquisition of knowledge about human behaviour, can be a serious danger. Apart from interference in privacy, it determines enormous power on the part of those who hold it.

So, there are similarities with the digital bank. This, if the control authorities do not take corrective action, feeds internal cognitive inequalities between top-level structures and operational structures that place staff in a position of strong subordination and that can impair the capacity for innovation[28]. The digital revolution undoubtedly brings great benefits, but it must be properly regulated at a social level, just as in companies and banks, management must manage digital transformation considering the right balance between technology and human capital.

Recent research on how banks' management structures are changing has shown a tendency to reduce the role of middle management and flatten organizational structures. But contrary to what the flatter organization theory says instead of a consequent empowerment towards staff, there is an increase in decision-making centralization, especially in large banking groups, and at the same time a reduction in the autonomy delegated to staff.

Banking work is now proceduralized in most business areas and controlled through digital reporting by the top management who no longer use intermediate management lines for this purpose. This is not only explained by the objective of reducing costs, in this period of economic crisis, by streamlining and flattening structures, but is also the result of increasingly invasive banking regulation that imposes greater internal controls on management[29]. In this way, the banks are pushed, we

[28]McKinsey&Company, *A future that works: automation, employment, and productivity*, McKinsey Global Institute, 2017.
[29]ARMENIA, CASALINO, GNAN & FLAMINI, *A systems approach to the Digital Transformation of Public Administration*, in *"The challenges of public management: new organizational models"*, Prospettive in Organizzazione journal, vol. 14, 2020.

might say back in time, towards the typical model of the mechanical bureaucracy that was widespread in the past when the bank was not yet computerized.

7. The digitization of processes instead of enhancing the bank's human capital tends to make it lose importance, requiring it to assume bureaucratic, essentially operational roles. Concerning a large part of the staff, this contrasts with the theory of business process reengineering and lean organization according to which ICT technologies should instead free work from routine, elementary and repetitive activities and increase the time to devote to intellectual activities. In addition, by assuming digital procedures a leading role of executive work, knowledge is centralized at the top of the company and above all the staff structures[30].

In the past, management, officials and generally bank staff were custodians of highly qualified knowledge, built with experience, and were able to interact with management on a strategic level, market developments and business valuation.

Knowledge was then distributed in the business context. Today this knowledge is very centralised. They are especially implicit in procedures, expert systems, and artificial intelligence. It is these intelligent systems that drive the behaviour of operational structures. There is no longer any need for staff to have a complex and interpretative knowledge of financial phenomena and decision-making skills. Staff are essentially required to be able to use the procedures correctly and to comply with the regulations. Thus, the relationship between digital technologies and employees has reversed: the ICT and the digital procedure are recognized as an intelligence while the user becomes an operational tool.

The diffusion of digital technology in the bank has therefore changed both the degree of centralisation/decentralisation of decisions and the management of information and knowledge. As a result of both the economic crisis and more restrictive regulation, the bank's top management has become very sensitive to having every-

[30]AHMAND & SCHROEDER, *The impact of human resource management practices on operational performance: recognizing country and industry differences*, Elsevier, 2013.

thing more directly under control. The organizational pyramid has thus been simplified and flattened. Efficiency has improved but management effectiveness is likely to have been reduced. In fact, the directional workload has increased, the internal dialectic has disappeared, the body spirit has faded, and the learning organization processes have weakened. Nonetheless, top management does not seem to care that much. In fact, he seems confident that he can govern the greatest complexity thanks to ICT technologies.

So, we are facing a challenge to Simon's limited rationality[31]? As the scholar observed, business decisions are never rational. They are conditioned by the information available, the cognitive limits of managers' minds and the time they need to be taken. As a result, they can only be relatively satisfactory. Today, however, the context has changed and is very different from when Simon elaborated on his important theory. Machine learning is thought to increase the rationality and objectivity of decisions through a higher predictive ability of behaviour made possible by the electronic processing of a wealth of information that was previously unimaginable.

In fact, the fact that banks are catching up on other operators and sectors and that a new bank model is being developed is becoming increasingly apparent. In fact, it is thanks to digital technology that top management is induced to shorten the hierarchical chain being able to directly control the operation. As far as the strategy is concerned, it believes that it can also be centralised with a good support staff. Thus, the strategies fell from above without comparison, internal dialectics, and involvement of operational structures[32].

Driven by the 2020 pandemic's work-at-home mandates, the future of work in banking and finance may be in the midst of disruptive change. Because this disruptive change is not just in banking and finance, but society wide, executives, support staff and customers (both institutional and private) have instantly developed ad-

[31]SIMON, *A Formal Theory of the Employment Relationship*, Econometrica, vol. 19, no. 3, pp. 293-305, 1951.
[32]COSTA, GUBITTA & PITTINO, *Organizzazione Aziendale – Mercati, gerarchie e convenzioni*, Mc Graw Hill, 2021.

vanced capabilities in working digitally. Accordingly, society wide trust in the use of digital instruments and processes in finance has bounded forward. Artificial intelligence, machine learning, big data analytics, blockchain ledgers, digital money, and myriad digitally developed financial derivatives are losing their mystery both inside and outside institutions and companies operating in banking and finance.

Such a ubiquitous disruption means that formerly competitive organizations who seek relief in a return to old ways of working could be hopelessly outdated compared to competitors that capitalize on their own newfound digital skills, those of their trading partners, and those of their customers. But such a trust in a more digital society may quicken the pace of change. The disruptive growth of societal trust in digital banking and finance could accelerate to achieve higher levels of efficiency, requiring the bank to learn, develop new knowledge and innovate, in order to achieve the necessary condition for its vitality in a competitive environment. The bank runs the risk of suffering, without knowing or having noticed, but neglecting its effects, an impoverishment of its human capital. In this way, the company's top management risks losing control of the bank thinking instead of strengthening it.

Meanwhile, there is much to object to the effectiveness of centralised planning systems. The supportive technostructure, not being involved in the operation, from which it remains distant, can only reason according to deductive logics, macroeconomic analysis, scenarios, and simulation models. There are therefore serious doubts about the actual diagnostic and design superiority of these approaches over participatory systems, information flows and indications that can also come from below. Nor can it be considered that innovations of any kind proposed by the base, regardless of their relevance, are to be discarded because having to be digitized, creating integration[33] problems so that innovation can only be the responsibility of the centre that can manage it systemically.

All this could be further strengthened with a view to a fully virtual bank and a

[33]GHOLAMZADEHA & JALAIB, *Integrative approach in human resources strategy formulation*, Elsevier, 2012.

predominant use of big data and intelligent algorithms to be able to cover the needs of the several stakeholders[34]. It is believed that they are a fundamental support for decisions because they allow to identify recondite correlations between large masses of data with which to predict customer behaviour, risk trends, the probability of future scenarios.

[34]WU, *Towards a stakeholder perspective on competitive advantage,* International Journal of Business Management, vol. 8, 2013.