

# PARTICULARITIES OF TRANSFER CHANNEL IN THE FINANCIAL NETWORK MODELING

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## Abstract

As is known network model is based on the defining element: the transfer channel. The most research in this area focused on what is transferred (flows of material, financial, energy, information) between two nodes in the network and less on “technical support” transfer – transfer channel. It seeks to propose an analytical model of channel transfer taking into account the types of transfer flows and nodes that are connected. Our proposals we believe can contribute to a better identification of financial networks and for solving practical problems in the modelling type can't provide a solution (network bottlenecks, transfer between different networks, a network relationship with the environment and so on).

**Keywords:** transfer channel, network modelling, financial network

**JEL classification:** C45, C58

## 1. Instead of introduction. Network versus system

It is known that in the past decade we have witnessed a number of changes in all spheres of social and economic life that constantly put into question the known values, hierarchies, organizational form.

The combined impact of changing trends carrier (transition from centralization to decentralization, decentralization of decision-making, the emergence of interactive technologies, an unprecedented level of globalization, etc.) have resulted in reducing the influence hierarchies, systems, reducing bureaucracy, blurring Authority inability decision-making structures to solve the fundamental problems of society.

The functioning of societies, economies prove unproductive, being gradually substituted with the Community model, the mutual assistance, managerial economics is replaced by entrepreneurial economy.

Interaction men went to another level, prioritized groups began to interact in otherwise appropriate new technologies, and organisation authoritarian system has gradually turned into a networked organization, claiming that each network entity (institution, company, individual) to do their duty to fulfil obligations to others.

At the same time, targeting only individual to "career" is proving inadequate in dealing with change, "multiple qualifications" and increased opportunities to choose an adequate amount of information, provide flexibility and strength, versatility and permanence both for individuals and for society.

The new model towards which society (or network) brings together people and self-help is the symbol of the new organizational paradigm, reducing frustration and inertia, failure and depersonalization.

Globalization requires knowledge of "democratization" information network, networks spread featuring an authentic approach to the problems facing humanity, promoting networks that hierarchies can't provide specific horizontal connections.

From a structural viewpoint, the specific network type model is that each node, cell, individual is at the centre of each is important, equipotential, the strength and flexibility of the network. In the network diversity and differences are concentric, but these approaches and equalize Network members are equal partners, cooperating and integrating continuously.

## 2. Specificity financial network

If we look only from a financial perspective, there is an apparent specificity financial network, about the particularities of flows, nodes and transfer channels.

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In this respect, the basic elements are:

a. Financial nodes may be of a different nature, but their essence is the same, being that generate, holding and carrying forms of currency, banking or not<sup>93</sup>. They can be individuals, productive firms, banks, etc. State examples are considered at different levels of aggregation, grouping them can be achieved but homogeneously by different criteria;

b. Activation financial network elements (tools) make the interaction between entities, i.e. their mutual influence, which can be considered, in fact, supports tangible or intangible forms of currency, resulting in the paper currency, bonds, checks, deposits, treasury bills, etc. Their role in the network is dependent entities, leading, in turn, the nature of entities as constituents.

c. Operations to interconnect entities by transforming procedural tools so they can achieve financial role activation space, the transaction constitutes an active element transition from one state to another, such operations can be considered dual active or liabilities, income and expenditure, and functional, of regulatory, executive, guarantee, etc. The role of operations is that they generate interconnect constituents, resulting consistency and coherence within the network.

d. Interconnections are links between the constituent links reciprocal interdependence, which is a transfer of information that can be transferred to a real space, gaining consistency, say substantial. Interconnection is achieved by channel transmission, transfer, including transfer and technology, languages and codes, development nodes and configurations (linear, sequential, focused, concerted etc.), transfer vehicles, assembly and supply of information, etc.

e. Interactions are characteristic elements of the network, which may give network identity, autonomy and reproducibility; nodes are recognized as part of a network is supported vendors and recipients of information targeted value instruments carried by the network. Interactions are embodied in financial shape flows that influence both the issuing node and on the receiver. Interactive two-way flow is directed, that any transfer of an instrument, a form of monetary support, requires a transfer in reverse of another instrument at the same time or staggered, often multiplying valuable information<sup>94</sup>.

f. Identifiers allow financial flow definition, delimitation, differentiation and discrimination flows depending on the significance of these identifiers can be highlighted as follows:

- Content flow composition, often depending on the nature of the instrument and its characteristics, such as liquidity, maturity, etc., highlighting the nature and content flow;

- Sources and recipients of flow, where the flow interactively specific financial network, representing nodes that are simultaneously the source-destination, the interdependence of the bank, for example, receiving a stream of cash, receivables and are therefore receiving and transmitting a financial assets flow saving nature and are therefore a source, scriptural money and saving money are the two forms of two-way currency transferred by the specific instrument warehouse;

- Relevance flow, that its significance for partners that can be circumstantial relevance or strategic, depending on preferences, needs, tools, etc., beyond the subjective appearance of this determinant, consistency depends on the form of money, its value, the tool flow transferred by the size of its value, so that regardless of circumstantial factors, the relevance of debt flows differs from that of the flow of claims.

g. Quantifiers financial channel provides interactive sizing and determination of flow parameters can and should be transfer channel, allowing adequate interconnection network according to their relevance determinative. We can highlight the following quantifiers:

- Transfer bandwidth is its formative feature, which gives flow embodiment, depending on flow identifiers, and the environment in which the flow "flow" capacity varies depending on factors often uncontrollable, a stream of cash payments being saving a different stream or financial investment;

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<sup>93</sup> In the entity (node) transformations occurring substance, energy, information, which means that a node belongs simultaneously to a variety of specialized networks (financial ones being only one species)

<sup>94</sup> Financial network is composed of bi-univocal flows of money instrumental form flow network representing specificity determinants and flow characteristics influencing network quality

- Transfer channel length, depending on the source and destination identifiers, and the transfer circuit understood that the sequence of the segments carrying a flow of the use of the forms of monetary flows with the same source with different uses of such payments or investment leading to a transfer channel with different lengths;
- Transfer speed of flow is considered very important feature, especially given computer networking technologies, the opposite of which is latency, and a characteristic derived as the difference, lag;
- Duration of flow, depending on the length and speed, but also favourable or adverse potentialities flow;
- Transfer channel reliability, which is likely to make the correct transfer and long financial instruments, according to the specific determinants and characteristics.

### **3. Place and role of transfer channel**

Obviously, the financial network approach involves a more open, a more complex financial space.

At the entity level, we consider the existence of a system operating on systems theory (as decision-making, information system, logistics system, etc.). But what happens when you go to the "micro"? The input and output of a system we have two sets: the set of inputs and outputs lot, and one or more feed backs.

But output lot should have a purpose by transforming the inputs to the system and inputs should be set outputs from other systems.

This transformation of inputs into outputs and vice versa is done according to the network model by using transfer channels between entities (nodes). Purpose of this communication is to precisely identify features channel transfer financial networks.

A first observation concerns the specificity of financial flows within the network. Although we have a variety of entities connected by channels of transfer, we believe that the link between two nodes is as  $a=f(b)$ , namely perceived financial flow at the entrance of an entity in a transfer channel has a single sender (and only one), another node in the same financial network.

Cash flow uniqueness does not imply the existence of a single transfer channel. There may be financial transfers on the same channel transfer, but at different times, with pairs of different transceiver nodes with different amplitude and frequency of financial flows.

As a result, the transfer channel should possess first "sensors" to identify the transmitter and receiver of a certain cash flow, "sensors" which, according to a certain signal attached financial flow, guiding financial transfer from a particular transmitter to a specific receptor.

Also transfer channel should be sized so that it can provide a certain type of cash flow (cash payments, savings, investment, etc.) of a certain magnitude and a certain frequency. This feature can be called a transfer channel capacity is given by:

- The set of nodes transmitters and receivers (represented by the set of "sensors")
- Frequency of financial transfers between pairs of nodes transmitter - receiver
- Maximum flow transferred
- Operating costs for the transfer channel

Different situations occur when concrete financial networks, such as a financial shock, a financial jam, a node disappears while a transfer is made to or from this node etc. and channel transfer must react, so financial network fully functioning.

For this transfer channel must be controlled to operate in the designed parameters. The question is who controls the transfer channel, because a model of networked nodes only reminds transfer channels. In this sense, in our view, participatory mode of action of entities in financial networks implies that to them and the role of design, implementation and control of transfer channels.

In this regard, we believe that creating a channel transfer should be made transmitter node, because it has a direct interest in the "exploitation" of its outputs. Also, financial flows should be harmonized with other types of flows (materials, information, and energy) and search one or more recipients 'financial' should take account of the existing or potential flows. A role he has control of

financial flows and the receiver node, because any financial input it must be consistent with certain "parameters" set (a transmitter node prior contract, for example).

Information in any network monetary transfer channel will be given some abstract properties that contribute significantly to the induction of network reliability, namely:

- The existence of information concerning the suitability unspoiled money in the future (it involves a transfer channel does not produce changes in financial flows);
- The existence of information on the use of contractual relations laundering;
- The existence of information on the behaviour and expectations of the entities and subjects.

Information determines the unitary financial network, establishing a climate of trust within the network environment needed its reproduction.

In addition to these properties abstract financial transfer channels in the network should have a number of characteristics, among which we have identified the following:

- Representativeness, its reflective feature, highlighting the appropriateness, the correlation between interactions made by the transfer channel and the real needs of the economic, social, cultural, financial network is not directly engaged in making explicit purpose of economic activity, namely, obtaining gain; representativeness gives channel transfer feasibility and reproducibility, the latter being an intrinsic attribute of the interaction, a representative channel transfer functions conditional assertion currency, and the proper interactivity between constituents monetary financial instruments;
- The effectiveness of channel transfer highlights quality to achieve the aims in concrete situations considered promptly and at minimal cost, i.e., the ability to be interactive in terms of reasonableness, of rationality based on trust, effective transfer of currency while assuming maintaining monetary value of financial instruments;
- Velocity channel transfer speed transfer instruments, financial assets in the transfer channel, which depends on the flow rate of each feature and the degree of interconnection flows of their interactivity, favoured the existence of defining elements complexity of the network, obviously depending on the duration and velocity flows involved reliability, transfer of technologies used, and the feasibility of the overall network architecture;
- Intensity transfer channel, which is expressed dual loading and diversity of instruments, forms of currency transferred by specific flows, as a potential feature of the channel transfer intensity is enhanced by increased reliability and complexity, and the inverse relationship with its extensively;
- Institutively of channel transfer characteristic is functional, its formative, meaning assignment to a set of institutional rules, structure and functional relationship, which establishes the operating rules, protocols and specifications within a defined architecture, configured and composed, forming a network with specific attributes.

#### **4. Conclusions**

A closer analysis of financial networks reveals a multitude of issues that a network model is not entirely surprising. One of these issues relates to the specificity of transfer channel for financial networks.

Along with general attributes attached channel transfer financial networks are a series of specific characteristics such as representativeness; effectiveness; velocity; intensity; institutively.

Failure to transfer channel characteristics can lead to the emergence of risks in the operation of the transfer channel, but also the whole financial network.

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