

Gorbachuk V.M.

Ph.D.

Institute of Cybernetics named after V.M. Glushkov NAS Ukraine

ORGANIZATION OF FUNCTIONING FOR NETWORK INDUSTRIES

The purpose of work is in-depth study of the market features for novel high tech industries. Network industries cover such everyday things as telephone, Internet, email, hardware and software, music and video players, videofilms, communication operations in banking, legal advises, airlines etc.

The methodology of research of modern network economics is based upon consumer demand under network effects, compatibility and standartization decisions, technological advances in network industries, bilateral markets, information grids and intellectual rights, social impacts. The network represents a group of customers (consumers or firms) using goods and services based on similar technologies.

The findings show what promotes new standards. Presence of network effects at standard adoption may have strong influence on market behavior of firms. The specific market outcome (say, consumer adoption of a new standard) depends on how consumers form their expectations about size of network customers. The reliance on joint consumer expectations generates multiple equilibria, when all consumers adopt a new technology in an equilibrium whereas they do not adopt that technology in other equilibria. Network effects represent the special type of externality at which consumer demand and/or firm profits relate to a set of consumers and/or producers using the same (or compatible) technology.

Network effects are generated by increasing level of adoption (popularity) for a good or service. Network effects of consumption may be both positive (when consumers benefit from the increasing number of consumers who are using the same or compatible brand (a product with distinguishable technical characteristics)) and negative (when consumers lose from the increasing number of consumers who are using the same or compatible brand). Negative network effects exist due to

congestion or interference as well as snobbism or vanity when consumers lose in a sense of belonging to an elite group with growing level of product adoption.

There are direct and indirect network effects while the both are of the same origin. Direct network effects assume existence of an extra customer having a direct (positive or negative) effect on other network members: network members gain a positive or negative value from their ability to interact with the additional (new) member directly. Indirect network effects do not have such direct component while involve economies of scale: for instance, within a network of credit cards, a customer does not have a direct gain from the fact that someone else has such credit card, but each additional customer will encourage traders to accept that credit card. Then a credit card holder will have more options among traders accepting such a credit card.

As benefits of consumption depend on combination of complements, network economics relates to situations where consumption is defined by systems of complements. In the case of direct networks, subscribers have interconnections. In the case of indirect network effects, hardware and software are complements. Various approaches to compatibility (the approach of network externalities, the approach of components, and the approach of software variety) often result in very similar equilibrium utility as a function of the number of given brand consumers. The more people buy a given brand of hardware, the more software will be written for that brand. Therefore, the equilibrium depends on the number of customers and does not depend on the number of applications of software supporting given hardware purchased. If companies capture a market share before facing competition, the network effects associated with their installed bases generate switching costs from one brand to another (incompatible or less popular) brand. Switching costs and network effects are interrelated.

The original conditions for functioning of network industries on the sides of both consumers and providers in the industries are obtained as well as the models for development of innovative industries and diffusion of technologies.

The practical value of research results is expansion of Internet, acquisition of Lotus by the MicroSoft, competition between DVD and DIVX standards, application

of ACH within the U. S. FRS, popularization of Amazon Kindle, iTune, FaceBook, Twitter, LinkedIn, mobile communication.

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