Food Mobility and Traceability
The Preconditions for the Democratic Design of Technology

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Media theorist Tatiana Goryucheva investigates the logic behind the correlations between the traceability of food and the technological and social processes during its production. She advocates a democratic model of a socio-technological infrastructure for reconnecting people with their natural and social environment through food.

The NomadicMILK project by artist Esther Polak presents a poetic interpretation of landscape and mobility. The project follows the daily routes of two dairy economies in Nigeria. Tracked by GPS, the personal routes of nomadic dairy farmers and local truck drivers become an object of reflection. – Photo: NomadicMILK

Tracing the origin of our food, its quality, conditions of production and other relevant data is a service we expect modern technology should be able to provide us with. Many personal mobile devices today can be updated with applications for scanning symbolical codes on products' packages. Production and delivery companies increasingly use advanced equipment and software to monitor their supply chains. At the same time, expert and activist organizations provide the public with plenty of information on different

aspects of food's background and related issues. Yet we as consumers, standing in front of a shelf in a supermarket or local grocery shop, have no clear picture of where our food comes from, how is it produced or even what, exactly, is in it. What is the missing link?

So far most ongoing research and development reveals a predominantly technocratic approach towards the issue of food traceability, which is the elaboration of practically and economically efficient tools for monitoring and controlling food supply chains on national and international scales by companies and governmental authorities. The main argument against such an approach is that it omits the diversity of agendas embedded in the politics of the global food market, where relationships between food producers and consumers are increasingly determined by a variety of institutional arrangements. The problem with those arrangements in the situation of a globalized food market is that their settlement is often not transparent and the major players and beneficiaries are not fully accountable according to democratic criteria. Since the role of technologies in fostering both social and economic relationships within the global network society is increasingly important, it seems logical to question the politics of its development from a democratic perspective. What seems to be the most striking problem in the case of food traceability technology is that its objectives so far do not include an active role of the consumer as a critical political player, despite his economic significance.

In this article I would like to review the critical aspects of the logic of interrelationships between the issue of 'food traceability', objectified in a technological form, and the social process in the course of its production. The question that I seek to address in this regard is whether the current practices in the development and implementation of food traceability under the conditions of globalization adequately incorporate the growing demand for democratization, that is people's involvement with politics, especially when it concerns the mediatory role of technologies and the institutional arrangements on the global food market.

Towards a Non-Technocratic Approach

In the contemporary information politics of the food market notions of 'security' and 'safety' are the predominant incentives behind the idea of food traceability taking shape in public debates right now. Considering the increasing dynamics of the global food market in terms of the quantity of exported and imported products, the public concerns about guarantees of quality of food delivered from all over the world put more pressure on the food industry and governments to provide a proper control. At the same time, a range of other issues and concerns are being introduced into the public debate. In particular, ethical considerations are becoming an increasingly important factor in the economy of food production, trade and consumption. The authors of the research *Ethical Traceability and Communicating Food* advocate a shift in the regulatory agenda concerning food-related policies of the European authorities. It should incorporate a broader spectrum of the ethical concerns voiced by citizens, such as the preservation of the environment, social injustice, animal welfare and fair trade. The authors stipulate that this is a rather practical political matter that should be structurally addressed: 'From the political and institutional standpoint, the themes of governance, democratic citizenship, political participation and sustainable development are confronted with the compelling need to establish institutions that are capable of delivering efficacy and maintaining legitimacy both in the society and in the market.' [1] Further on the authors state that reviewing reforms of the food market regulation in the EU since 1997 reveals that 'the nature of EU governance has not changed to any notable extent in the food safety regulatory reforms' and remains 'essentially technocratic'. [2] In this context traceability is imbedded in EU food law (Regulation 178 / 2002) as its general principle and is in itself 'a precautionary and procedural instrument for food safety and risk management that is based on the model of liberal governance whose main purpose is the regulation and unification of the European market'. [3] In response to that a different approach to traceability is suggested that, instead of a sheer regulatory

instrument, should be turned into a means 'to promote and facilitate' an informed food choice, thus putting the consumer at the centre of the equation. 'In this way,' the authors argue, 'trust may be re-embedded in the European food system in a more sustainable fashion.' [4]

Sociotechnological Challenges of Globalization

If we assume that the idea proposed by the authors of the research and voiced by many others is to be a guiding principle for the implementation of food traceability, then it should concern itself with reassessing the spectrum of relationships between the public on the one side, and on the other the economic and political actors associated one way or another with the production of technological solutions for food traceability. Up until now the development of traceability technology has mostly addressed the internal needs of the food industry, such as managing supply chains and quality control, whereas the desires of consumers are presented discursively as a value-adding factor. Recently, more interest has been shown in the development of consumer technologies, mainly applications for portable devices such as IBM's 'Breadcrumps', publicized but not yet available, or currently distributed via iTunes 'HarvestMark' for iPhone. However, the developers of these and similar applications are destined to run into serious dilemmas when embarking on the task of food information supply, which one cannot simply crowdsource, or make fully open and voluntary. While the economic stakes are high on the food market, the implications of providing improper information linked to a product on a shelf are potentially too damaging for both consumers and industries. On a global scale one cannot organize a process of the required data management without reliable sociotechnological support structures, which would guarantee the accuracy and verifiability of information. In the situation of a competitive liberalized market with privately owned companies as major players, guided by legal arrangements that favour the means of reinforcement of competitiveness (of which commercial secrets and intellectual property protection are the most crucial), general public interests tend to be superseded by private interests in the course of designing commercial technology. This means that when the initiation of technology is left to the entrepreneurial will of competing companies, the ideal 'free market' approach to food traceability is not an appropriate solution, as it cannot provide the level of transparency and external control necessary for the sake of public interests.

The nature of traceability technology is such that it requires a complex infrastructure and elaborate arrangements, including the institutional ones mentioned above. Traceability is an example of a pervasive network technology, which does not have a finished stable form and requires multiple interrelated nodes through which data and metadata can be integrated and verified. A practical tool that can connect us to the history of the food that we consume is just a part of the arrangement. It needs to be built *in line with* the *prior* institutionally established standards regarding the whole *chain* of food production, delivery and informatization. The main problem with the design of the technological component of the broader issue of food traceability is that, unlike an autonomous device that has to comply with a limited amount of technical standards defining its functionality, it must be applied to the rather fluctuating unstable and heterogeneous reality of the global food market. It means that the process of setting up standards for food traceability technology should take into account the political challenges that the process of globalization involves, where the task of setting up standards is probably a smaller problem than their implementation and control. One of the most critical of those challenges is the democratization of the process of technological development.

Politics of Standards

For philosopher Andrew Feenberg, the way towards the democratization of technology lies in the reconsideration of the modes of technical design. The latter reflects a 'technical code', a set of standards that is the result of rather controversial social processes.[5] These processes are hidden in the technical object; a finished product does not reveal the controversies involved in the politics of setting up its standards once they are established through a 'technical code'. If we accept Feenberg's argument that setting up standards is the practice in which the politics of technology resides, then we should look for ideas of defining and implementing the standards that are more suitable for a democratic process.

The recent movement towards the democratization of technological development brought in the idea of 'open standards' along with 'open source' software design practices. The main premise for the introduction of open standards has a lot to do with the ideology of open and free communication, upon which the development of the Internet and the World Wide Web have been based so far. According to Tim Berners-Lee, the Web inventor and director of the World Wide Web Consortium, which plays a significant role in laying down guidelines for the introduction and implementation of standards for the Internet and Web-related technologies, 'open standards' are 'standards that can have any committed expert involved in the design, that have been widely reviewed as acceptable, that are available for free on the Web, and that are royalty-free (no need to pay) for developers and users'.[6] While the 'Internet era' of technology dramatically influenced the modes of its development to the extent that ideas of 'open standards' and 'open source' started to be adopted by governments and proprietary companies, the critical issue of the democratization of technology is not resolved by its premises. The main question in this regard is: How are the social and political issues related to technological implementation, but which exceed the scope of technological expertise, present in the process of setting up technological standards? So far, and Berners-Lee's definition complies with the prevailing assumption, the purview of technological standards remains a sanctuary of technology experts. Moreover, regardless of the definition of the standards, the tendency towards depoliticizing standards-setting procedures occurs particularly in the institutional autonomization of the role of specialized professional communities in the standards-development process, and, partly related to this, the expansion of the privatization of standards. The latter is characterized as a 'digital enclosure' by Timothy Schoechle in his research *Standardization and Digital Enclosure. The Privatization of Standards Knowledge and Policy in the Age of Global Information Technology.*[7] Schoechle's analysis is an attempt to shift the focus of discussions about standards from results to the process, where forms and conditions of participation should be of primary concern. In this respect, further deliberations about the democratization of practices regarding standards development should focus on reassessing the existing institutional arrangements.

The current stage of development of standards for food traceability is expressed in the ISO22005:2007(E) document. The document is designed within the procedural framework of the International Organization for Standardization and can by no means be characterized as an 'open standard'. Despite the fact that, according to the ISO statement, all interested parties affected by a standard can potentially be present in the committees responsible for its development, participation in the process is not transparent and even susceptible to dominance abuse, according to critics. While the development of traceability technologies can hardly follow the path of the Internet and Web technologies, developed mostly outside ISO, a critical review of the social mechanisms of standards setting for its implementation necessarily should take into account the expectations introduced by Internet communities regarding the openness of the process. At the same time the problem of democratization of technology cannot be reduced to the issues of openness and accessibility alone. There is an intricate dichotomy built into the practice of the development of standards, particularly within an international context. On the one hand, the design of most of the standards assumes their voluntarily adoption, unless a

special, usually governmental, regulation enforces it. On the other, the very necessity of standards is created by a search for binding rules and, thus, controlling tools over technological development. It means that in order to ensure the development of technology with respect to the demands of the rest of society, the standardization procedure itself should be designed in such a way that it includes a broader social agenda at both levels, contribution and control. As the case of food traceability shows, enabling it goes far beyond the technological solution in a technodeterminist sense.

Can We Close the Democratic Gap 2.0?

One of the major problems in the relationship between the development of technologies and democratic institutions was identified by philosopher John Dewey in his analysis of the democratic public sphere of the industrial age. He observed an inadequate institutional response to the industrial revolution, which he associated with 'democratic disturbances'. [8] The production of new technologies in the course of industrialization had a disruptive impact upon institutional arrangements. Instead of replacing old institutions by new ones, a rather contradictory readjustment occurred. Persistence of old institutions, the most important of which for industrial development had been the institute of private property, along with the introduction of new ones, accompanied by ideologies of utilitarian economic determinism and individualism, contributed, according to Dewey, to disturbances of democratic forms. It undermined the necessity of broad and direct public engagement with politics. One can see that the problem repeats itself in the case of the postindustrial informational revolution. While the Internet and social media enable people to be more engaged with matters of society and its political agenda in a direct and participatory way, the institutional political realm is still unable to structurally accommodate this remarkable sociotechnological shift in its practices. The food traceability case is an obvious example of this discrepancy. As more and more diverse groups and individuals begin to play a significant role in the information politics of the food market at a global scale, especially with the help of social media, the food industry becomes more dependent on peoples' knowledge about the products, based on information provided by third parties. The question is: How can the increasing social participation in food information politics be integrated with the implementation of food traceability at the technological level in a more open democratic way?

The logic of the development of software applications for personal devices is such that together with their increasing role in the mediation of our engagement with everyday reality, the demand for more freedom regarding flexibility and customization of tools according to individual choice increases, too. This is what very likely would be an ideal food traceability application, according to one of the bloggers on the issue: 'Here is how I would envision the "shopping app" of the future. First, I can personalize my filter. I can do that based on standardized product attributes. I can set, whether I care about "organic", "locally grown", absence or presence of certain ingredients and other filters. Once this filter is being set, I would like to cross reference exactly those product attributes with my local grocery stores, I would like to see who carries products and potentially at what price. When I really would use my application on my smart phone to read a bar-code, I would like to be flagged, if any of my desired features is missing and which ones are present. I don't want to read a poem about the product where I need to find the information I care for by reading 90% of information I do not care about at all.' [9]

The next step is to envision a democratic model of a sociotechnological infrastructure for reconnecting people with their natural and social environment through food. The problem of the democratization of technology is not the question of choosing a mode of social or practical engagement with technology, but rather the elaboration of principles for a proper inclusive, open and fair process of its development, and their practical implementation.

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Footnotes

1. Christian Coff, David Barling, Michiel Korthals and Thorkild Nielsen (eds.), *Ethical Traceability and Communicating Food* (Dordrecht: Springer Netherlands, 2008), 24.
2. Ibid.
3. Ibid.
4. Ibid.
5. Andrew Feenberg, 'Democratic Rationalization: Technology, Power, and Freedom', in: Robert C. Scharff and Val Dusek (eds.), *Philosophy of Technology: The Technological Condition* (Oxford: Wiley-Blackwell, 2003).
6. Tim Berners-Lee, 'Long Live the Web: A Call for Continued Open Standards and Neutrality', *Scientific American Magazine*, 22 November 2010. Available online at: www.scientificamerican.com, published 22 November 2010, accessed 5 January 2010.
7. Timothy Schoechle, *Standardization and Digital Enclosure: The Privatization of Standards, Knowledge, and Policy in the Age of Global Information Technology (Advances in It Standards and Standardization Research)* (IGI Global Information Science Reference, 2009).
8. John Dewey, *The Public and Its Problems* (New York: Henry Holt & Co, 1927), republished in 1954 by Swallow Press and in 1991 by Ohio University Press.
9. See: www.food-erp.com, published 31 May 2010, accessed 15 January 2011.

Tags

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