Web, value and labour

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ABSTRACT
This paper challenges the dominant discourse that the Internet is changing the economy dramatically. In a context where digitised value creation is spreading, it critiques the economically-inspired diagnosis of a fundamentally changed Internet economy from a sociological perspective and establishes that the available economic data do not justify this prognosis. It next critically discusses current research into Web-related value creation, starting with a classic and generic definition of the concept. It then suggests a new conceptual approach to the relationship between Web and value, drawing a clear distinction between value generation and value realisation and differentiating both along the offline/online and commodities/commons dimensions. By means of these steps, the paper concludes that human labour remains the key source both of value origination and of value realisation processes, even in the Web 2.0 Internet economy.

Introduction
As the Internet continues to develop, we are exposed to a continuing stream of proclamations of novelty and socio-theoretical diagnoses of the times, from a variety of sources, each based on the notion that the Web has introduced fundamental changes to existing paradigms. These concepts include the ‘informatisation of production’ in Age of Empire (Hardt & Negri, 2000:280-303), the new ‘terms of the economic transitions’ in Beyond Capital (Hardt & Negri, 2009:263-311), the notion of the ‘new economy’ in The Rise of the Network Society (Castells, 2000:77-100) and the current thesis of the ‘new social operating system’ in Networked (Rainie & Wellman, 2012). The dominant discourse has it that the Internet is changing not only social behaviour but also its economic underpinnings. Digitised value creation embraces more and more areas, and it appears to many that the Internet is shaking the very foundations of our economy (Sharma, Krishan & Grewal, 2001). As early as 1999, E-commerce was foreseen as the precursor of a new boom, playing a role similar to that of railroads in the Industrial Revolution (Drucker, 1999:50). This paper takes a critical and sociological look at the economically-inspired diagnosis of a fundamentally changed Internet economy. To
that end, it starts with a critical discussion of concepts and explanatory models of the economy.

Investigating economic change from a sociological perspective inevitably touches on the notion of value or values. Standard sociological definitions of value usually start in the realm of beliefs and attitudes, for instance: ‘Everything social actors appreciate, appraise, wish to obtain, recommend, set up or propose as an ideal, can be considered as a value’ (Rezsohazy 2001: 16153). For this reason sociological discussions of the concept have for some time been dominated by methodological aspects of how to measure values and value change (Spates 1983).

In contrast, this paper draws on concepts that link the sociological understanding of value to peoples’ actions (Adler 1956), and especially to work, since this is the mundane locale where social and economic value creation are so strongly entwined that they cannot be separated. Sallaz (2013:10), following in Marx’ footsteps, stresses the relationship between work and value creation by defining the first in relation to the latter: ‘[Work] is the process whereby human beings transform the things of the world to create value.’ In his summary of philosophical and sociological debates on value, Sallaz points out that ‘valuation is a social as much as an economic process’ (2013:68).

What has been termed ‘Parsons’ Pact’ (Stark 2000: 1) has for decades established a division of labour between economics and sociology. In this division, sociology predominantly focuses on personal and/or cultural values, thus regarding them as plural, and strives to understand how and why they emerge and change. In contrast, economic theory in its mainstream addresses value in the singular, defining it as the benefit persons gain by consuming and/or buying goods or services. This ‘economy/society divide’ ... puts economic relations on one side, [and] embedded social relations on the other’ (Stark, 2000:2). Stark pleads for a definition of markets ‘not simply as embedded in social relations’ and asks for an acceptance that ‘they are social relations’.

Following these concepts that link value to work and see the economy as thoroughly social, the focus in this paper is on examining the utility of the value creation concept for and in the Internet economy. Following the call by Wellman (2004:127) for a more theory-driven approach to Web research, this paper searches conceptually for new forms and locales of value creation on the Internet. It asks, from a labour- and industrial-sociological perspective, whether the relationship between Web and value really is being formulated anew.

The first question to be asked in this paper is whether these changes already show up quantitatively in shares of value added. Examining the available figures regarding the development of value creation and revenues in Web-based business models, the second section concludes that, whilst there is some change, no satisfactory evidence can be found to justify a substantial overthrowing of former economic principles. A widely heralded change that is only reflected in a limited way in the numbers could also mean that the concept of value creation itself as previously defined now no longer fits a markedly changed economy. From this perspective, the third section discusses critically the state of research into Web-related value creation, using classic and generic definitions of the concept as starting points. As will become evident, current theoretical offerings remain too vague at crucial junctures to make a meaningful contribution to
addressing whether a paradigm shift is taking place in the economy. Hence, in the fourth section I propose a conceptual approach to the relationship between Web and value, analytically separating value generation from value realisation and differentiating each along the offline/online and commodities/commons dimensions. However, the three-dimensional explanatory space that results from this does not adequately capture the complexity of a Web-based value chain. On closer examination, other imperatives for differentiation emerge: value generation and value realisation are highly complex and partially entangled processes, and, in every one of their steps, it is possible to discern highly varied combinations of virtual and material tools and work objects in a multiplicity of organisational settings. Applied to a concrete example of the Internet economy, the proposed concept does not only highlight the variety and multi-dimensionality of value creation processes on the Web; what also emerges is how simplistic the prognoses of an economic paradigm shift are. By contrast it becomes clear – and this is also what the fifth section concentrates on in summary fashion – that what stands out as a constant amid all the variety is the role human labour plays in value creation.

By means of the above steps, the paper develops conceptually the proposition that human labour remains the key source of value origination and of value realisation processes, even in the Web 2.0 Internet economy. At the same time, however, Web-based products and services enable brand-new linkages between value generation and realisation, wherein the hip, unbounded working world of well-paid knowledge workers connects with precarious service jobs and under-paid production work – both in developed and developing economies.

Web and value in facts and figures

As an important preliminary step, it is necessary to subject to empirical scrutiny the claims that the Web has introduced fundamental changes into the foundations of the economy by examining the relevant economic data. This is not the place for a comprehensive, consolidated economic analysis; what I am interested in here instead is a generic matching of quantitative data to the alleged radical economic transformative power of the Web. The usual criteria for gauging the potentiality of an economic sphere are: first, productivity and labour market effects; second, the value creation contributed to the overall economy; and third, the potential for growth. A fourth basic question also poses itself: can the new phenomena be demarcated and captured with sufficient precision for these three criteria to be applied, given an economic sphere whose outline is only beginning to take shape? By way of introduction, using selected studies, I examine briefly these four aspects in relation to the Internet economy:

First, I look at quantitative indicators of the importance of the Internet economy. It has been known since the 1990s that a ‘productivity paradox’ can be observed with regard to IT investments (Brynjolfsson, 1993), which can only be compensated for by major corporate investment in organisational and skills development (Brynjolfsson & Hitt, 2001). While the rationalisation potential of IT is becoming more pronounced at present, this is also associated with negative labour market effects (Brynjolfsson & McAfee, 2011). A similar paradox can be observed in the Web-based economy. In
the ‘e-market paradox’, diminishing revenues and profit margins can be observed in e-markets (Moon, 2004:145). Productivity effects and labour market effects thus hardly justify the talk of a new economy.

Second, I look at the quantitative issue of ‘how much?’ At first glance, the scale of the Internet economy internationally seems unquestionably impressive. In 2011, the EU27, US $619 billion worth of business was transacted over and using the Internet, including online sales of US $289 billion. However, looking at the numbers proportionately puts this first impression into perspective. The Internet economy only contributes 3.8% of the GDP of the EU27 and only amounts to 5.7% of its total retail sales (David et al, 2012).\(^1\) Pure market shares do not appear sufficient to substantiate the frequently posited epochal economic change either.

While the transition to a ‘post-growth society’ (Jackson, 2009) is increasingly the subject of discussion, although still not under way in earnest, growth remains the dominant criterion for assessing the importance of an economic sphere. And the Internet economy’s growth projections are dazzling. Internet-based value added in the EU27 is projected to grow from USD 619 billion to USD 1.133 trillion between 2010 and 2016 (David et al., 2012). Such an immense increase – a hefty 83% in just six years – would unquestionably be striking, leading to the Internet’s share of GDP rising from 3.8% to 5.7%. Nevertheless, even disregarding the problems posed by reliable growth forecasts generally, as immense an increase as this does not result in a radical revamping of the overall economy.

In general, all Internet-related market observations confront the difficulty of measuring the respective mix ratios – which, moreover, are constantly changing – of the online and offline components in value creation. Estimates that are not clearly identifiable inevitably enter not only into the occasionally dizzying growth forecasts but into the actual numbers as well. Thus, the just-cited study differentiates between direct online commerce on the one hand and value created according to the principle of ‘researched online, purchased offline’ (ROPO) on the other. This gives the Internet economy the credit for every private purchase of goods that was preceded by online research into price or product information. This allocation distorts the estimates of the Internet economy’s importance upward in a way that seems unwarranted. Hardly anyone, for instance, would seriously credit every purchase based on product information in printed newspaper advertisements or catalogues to value created by the print industry. In addition, (David et al, 2012) differentiate between high-, medium-, low- and non-Web companies. This classification, typical in all observations of the Internet economy, is also necessarily less clear-cut and lacks an unequivocally explicable industry categorisation.

Since the quantitative indicators do not sufficiently justify the talk of a new era for the economy, an expansion of the analysis to include qualitative changes is obviously called for. Countless theoretical and empirical views exist in this regard that cannot be cited here in their entirety. Moving to the level of actual activity, drawing a pure\(^1\) A country-by-country comparison in the study shows a differentiated picture. For example, the GDP contribution of the Internet economy in Great Britain, one of the largest, is 8.3%, with the retail share at 13.5%. In the USA, by contrast, the shares drop to a more modest 4.7% of GDP and 5.0% of retail sales (David et al, 2012).
distinction between ‘atom work’ and ‘bit work’ (Rainie & Wellman, 2012:17) no longer suffices; the ‘cybertariat’ (Huws, 2003) reveals itself as complex and varied. In addition, it is not even clear any longer if and where ‘playground’ and ‘factory’ can still be told apart (Scholz, 2012). These diagnoses point to the need for qualitative arguments that might help us to reject or accept the thesis that new economic principles are needed to explain the Web economy.

Web and value: a qualitative change?

First, let us take a detailed look into the discipline that asserts that a radical economic change can be discerned in connection with the Internet, namely business economics. Already at the end of the 1970s, that is, long before the commercial exploitation of the Internet, assertions of a paradigm shift, from a ‘manufacturing active’ to a ‘customer active’ paradigm (Hippel, 1978) could be found. Such assertions have been repeatedly made in the course of the debate (Hienerth, Hippel & Jensen, 2012). Others see the paradigm shift in the replacement of an earlier ‘goods-dominated’ logic by a ‘service dominated’ one and in a phase transition from ‘relationship focus’ to ‘stakeholder focus’ (Czerwinski, Merz & Herbst, 2011). These paradigm shifts leave two questions unanswered to begin with. First, their proponents fail to show conclusively why the change has not shown up quantitatively to a more explicit degree (see above). Second, they largely leave open the question whether the Web merely facilitates an expansion of value creation into virtual space or whether substantively new sources of value creation are emerging. The rhetoric, at least, often suggests the latter.

Key considerations regarding the gradually (or perhaps abruptly) changed relationship between Web and value form the core of this section. The starting point for this is first a general and conventional understanding of value creation. Then follows a critical description in three steps of the state of the economic theory debate revolving around models of value creation on the Web.

If we take the current macroeconomic definition as a starting point, it is not immediately obvious why the question of value creation should be posed anew by the Internet economy. After all, the concept of value creation has long since not been limited to the production of material goods. Internationally, for the most part, a comprehensive production concept is employed that, following the ‘System of National Accounts’ (SNA), comprises all produced goods and services, including non-compensated services produced by the state or by private non-profit organisations, but excluding domestic reproductive labour or voluntary activities (European Commission et al, 2009:95-101). In general, business economics understands the concept of value creation primarily as a contribution by an enterprise to the national income, calculated with gross profit on total revenues minus net input costs. Only seldom does this involve an analytical distinction between value creation and value capture (see Bowman & Ambrosini, 2002). Instead it mostly entails calculating the amount of a value creation achieved in the market. Put simply, value creation in the usual economic sense is more or less an indicator of sales and/or profit successfully earned (not to be earned potentially) from certain products or services in certain industries, sectors or enterprises. For the Internet economy as well, the commonly understood value concept
is foremost a very general one, defined as ‘the sum of all values that can be appropriated by the participants in e-business transactions’ (Amit & Zott, 2001:494).

Whether it is meaningful to speak of a new and modified value creation in the Internet economy is not something that can be decided solely on this level however. What is needed instead is an examination of the processes, products and locales of value creation. Only if significant shifts and changes reveal themselves would an eventual revision or redefinition of value creation in the Internet economy be justified.

Within enterprises, business economics distinguishes between a company’s ‘primary activities’ (supply logistics, production, shipping logistics, marketing and sales as well as services) and ‘support activities’ (business infrastructure, human resources, technology development, purchasing). Under the Lean Management approach, enterprises are intent on keeping the latter as low as possible in designing the value stream and fighting against waste (Womack & Jones, 2003). There is for now no immediate compulsion to redefine these distinctions between functions of value creation within an enterprise with their tight linkages to actual (for which read material) production as part of the Internet economy.

By contrast, it is on the cross-enterprise possibilities fostered by the Web that most approaches focus their research attention when trying to identify new sources of value creation. In their highly detailed analysis of a host of different econo-theoretical approaches, Amit & Zott find a ‘multitude of value drivers’ and, based on that, pose ‘the question of precisely which sources of value are of particular importance in e-business, and whether unique value drivers can be identified in the context of e-business’ (2001:500). With the help of an empirical base of 30 US American and 29 European e-business firms (defined as ‘companies that derive at least 10% of their revenues from transactions over the Internet’) that went public between 1996 und 1999 and involve individual customers in their transactions, the authors identify four sources of value creation in e-business: efficiency, complementarities, lock-in and novelty (Amit & Zott:502-9). In doing so, they use the terms ‘source of value creation’ and ‘value drivers’ synonymously (Amit & Zott:494). Accordingly, in their analysis, value on the Web is ‘created by the way in which transactions are enabled,’ and these, in turn, are enabled by a ‘network of capabilities drawn from multiple stakeholders including customers, suppliers and complementors’ (Amit & Zott:515).

Although unified in a perspective that transcends the individual enterprise, two threads can be roughly identified in the debate over new Web sources of value creation. Leaving aside theoretical background and critical perspectives, they differ in where they locate the relevant value creation dimension: either they stress the analytical distinction between production and information along value chains or they focus on the changed relationship between businesses and consumers (these will be discussed below).

The changed relationship between production and information

Even in the mid 1980s connections were being made in discussions on value chains between the ‘information revolution’ (Porter & Millar, 1985:13) and value creation: ‘Information technology is (…) transforming the way value activities are performed and the nature of the linkages among them’ (Porter & Millar, 1985:4).
In this conception, not only does the way in which products and consumer needs come together change, but also, ‘every value activity has both a physical and an information-processing component’ (Porter & Millar, 1985:4). In their ‘information intensity matrix,’ these authors draw a distinction between the ‘information intensity of the value chain’ and the ‘information content of the product’ (Porter & Millar, 1985:6).

Repeated attempts have been made in this tradition to come to grips with this new relationship between production and information in four-field tables: For instance, Gensollen & Libbrecht (2000) distinguish between four relevant ways that Internet-based value is created: first, through a better and more specific segmentation of consumer groups; second, through the use of web pages that function as the interface between sellers and buyers; third, through the creation of completely new markets; and fourth, through reduced production costs and increased productivity based on the interplay between Internet and intranets (Gensollen & Libbrecht, 2000:131). Others put more emphasis on the entanglement of product and process and differentiate in more detail along the value chain. For instance, on the macro-level Sweet (2001) distinguishes between ‘industrial,’ ‘service/information,’ ‘knowledge’ and ‘Web/network’ and, on this basis, develops micro-level strategic configurations (‘value configuration logics’) via the two categories of ‘value drivers’ and ‘value configuration’.

As intuitive as these distinctions may each appear at first glance, on closer examination they do not resolve the question through whom or through what exactly value creation actually occurs or whether it materially changes with the growth in the importance of information. This is mainly due to conceptual fuzziness and implicitly normative assessments. First, the physical is assigned a subordinate, largely knowledge-free role. Second, there is a wild jumping back and forth between production and service levels, with the differences between information and knowledge left equally imprecise. Finally, there is a confusion between production processes and value creation processes. This, however, may have something to do with the focus of these approaches on altered production processes and a rather old-fashioned understanding of information technology.

The changed relationship between business and customer

Newer approaches that concentrate more heavily on the current development of the Internet, and in particular on Web 2.0, put considerably more focus on a redefinition of the buyer. In this approach the user as the direct or indirect producer of content moves into the centre of thinking about new forms of value creation. Here, we can distinguish three broad schools of thought:

First, there is the search for new direct business models that advise the buyer on possible new products. However, since the customer’s reluctance to pay for content is repeatedly evinced here (Gensollen & Libbrecht, 2000:123; Gomez-Arias, Jose & Genin, 2009:79), the Internet’s importance either for generating sales in the real world or for generating non-monetary values such as brand image is emphasised (Czerwinski, Merz & Herbst, 2011: 18-9; Gomez-Arias, Jose & Genin, 2009:79).
Second, there is the image of the customer as an active partner in processes of interactive value creation, which is even depicted as a path leading away from a market orientation toward a customer orientation and ultimately even customer-centricity (Piller, Ihl & Vossen, 2011:34-5). What seems to matter most here, at least rhetorically, is incremental value to the customer who, for example, benefits from location independence, convenience, accessibility and personalisation (Schreiber & Clement, 2010:256-8). Value creation in the true sense here recedes into the background. One might almost think that in Web 2.0 capitalism was doing away with itself – just for the benefit of its customer base.

Third, in contrast with these positively-tinged interpretations of value creation on the Web, other authors point to an expanded commodification. In these approaches, from a critical economy perspective, the new source of value creation clearly tags the Web as a place where interactive networking between people becomes a new object of commercial exploitation (Abelson, Ledeen & Lewis, 2008:110-1). Users are not primarily of interest as customers but themselves become merchandise (Fuchs, 2011) and community experiences on the Web turn into an object of exploitation and source of capital accumulation (Fuchs, 2012a). The core of many business models is ‘to get everyone to work for free’; namely, all that sharing has a ‘dark side (…) that hits labor hardest’ (Caldwell 2009:161).

The new quality of pulling in the user or customer is certainly the most impressive Web innovation, which we all experience daily. Depending on the perspective, new value creation sources are assumed to lie here, which – depending on the perspective – are interpreted as positive or negative, but at the very least spawn new paradoxes (Proulx, Heaton, Kwok Choon & Millette, 2011). Without question, what is new here is that new actors – customers and users, that is – are assuming a more active role in the value creation process. In doing so, they have stepped out of their previous roles as pure customers or consumers of supplied goods or services. There is a general agreement between the cited authors that a larger and more varied range of actors is taking part than in the past. However there is less agreement on how voluntary this participation is, who gains and who loses from this development. In particular, the dimensions considered and the examples adduced fluctuate to such an extent, that, in the present state of research, no clear and conclusive statement can be made that the source of value creation has actually changed.

The abundance of economically-oriented definitions and explanatory models is inspiring and identifies many relevant dimensions and categories which play an important role in the issue of a possible redefinition of the Web and value. Nevertheless, despite the multiplicity of approaches, it can be stated with regard to the source of value creation in the Internet economy that a ‘common conceptual base is still lacking’ (Zott, Amit & Massa, 2010:26). Even the definitions of the business models of dot.com managers seem ‘murky at best,’ and fail to distinguish between generating sales and generating value (Porter, 2001:73). Seldom has it been stated more pointedly that, despite all the euphoria about the Internet’s economic potential, if the Web does indeed redefine value, what is lacking is any economic or marketing analysis of how it does so.
Web and value revisited

In view of this rather unsatisfactory theoretical situation, another path will be tried in what follows in pursuit of putative new value creation in a Web-based economy. This uses the peculiar ambiguity of the value concept itself as its starting point. It starts from the presumption that value creation can be understood both as generation and as a siphoning off. Hence, both production and exploitation are both always already concealed in the concept of value creation. As a first step, a more sophisticated consideration of the value creation concept along these lines can be gained by an analysis that distinguishes between value generation and value realisation:

In what follows, value creation will be understood as the actual process of producing new values; that is, values that did not exist prior to their production process, before the application of human labour. Value realisation, on the other hand, is the process by which the product that originated as part of value generation is valorised and successfully exchanged in the market for money or other value. In other words, it is about actually realising the already-generated value in the marketplace.

This very abstract and generalised distinction will suffice for now. It is not new in the tradition of the economic labour theory of value. It is in this way, in particular, that the Marxist explanation of the economy understands value generation primarily as a material production process, in the course of which an equally material product is created by the exertion of human labour capacity. In this tradition, value realisation is conceived as a one-time, isolated act of exchange: as the transfer of goods from production to distribution. These definitions are ideal-typical, analytical characterisations, which Marx used in order to lay bare the nature of these processes in his political economy. Only in this way could he pursue his objective: to work out the importance of human labour as the crucial source of value added and hence of value creation. Ideal types and analytical distinctions, however, can never – and this applies to all schools of thought – be equated with empirical reality. The Marxian analysis pursued the nature of processes, intent on looking beyond manifestations (and their empirical variety). However, in applying Marxist theory the multiplicity of empirical manifestations has too often and for much too long been reduced to phenomena that are as close as possible to their intrinsic ideal type. The (mistaken) conclusion that has often suggested itself is that value can only be produced with material products and through industrial production, because added value is so impressively explained by them. In the same way, the importance of other areas of value generation has been underestimated for a long time, just like the value realisation processes, although there, too, human labour has also always engaged in creating value. Starting from this basic analytical distinction, I do not adopt the constantly recurring differentiation between production and information which appears so frequently in the works cited above. The emphasis solely on the interactive or the cooperative is equally unconvincing, because it is precisely such stylisation of the importance of cooperation in work and cooperation as work ahistorically as a new phenomena that makes it difficult for the Web-induced changes in the relationship between cooperation and work to be grasped analytically. From my perspective, the dimensions of the digital locale and the value form appear more theoretically promising.
First, let us examine the digital locale (whether it is offline or online). It is perfectly possible for this locale to be split apart for the value generation and value realisation processes, which has always been true of geographical location in the ‘real economy’ as well. Rarely will machines, cars, books or garments be sold where they were also made – a process that began on a large scale with industrialisation and which has assumed a new dimension in recent years as a result of globalisation. But if we search for a qualitative difference that first emerged with the Internet economy, then it is locale in the sense of the offline/online distinction. Different digital locales can be relevant for every step in the value generation and value realisation processes. Some things – due to material and other conditions – can only happen offline or only online. In other cases geographically-distributed offline processes are linked online. In still other cases what were formerly offline processes have been completely converted into online processes. Finally, totally new processes are also emerging online. A first two-dimensional matrix can be built with the basic distinction between value generation and value realisation and the dimensional offline/online continuum, shown in Table1.

Beginning at the two extremes, the following ideal-typical mappings can be made, each illustrated with a generic example:

- Value generation and value realisation both happen offline: a book is produced in a print shop and sold in a bookstore or read in a library.
- Value generation and value realisation both happen online: several co-authors collaborate on an online platform in writing a novel that later becomes available online.
- While the value generation takes place online, the value realisation occurs offline: several co-authors collaborate on an online platform in writing a novel that is then made available as a printed book.
- Although the value generation happens offline, the value realisation nevertheless occurs online: a book is produced by a printer and made accessible through an online portal.

Table1: Value generation and value realisation: 2-dimensional matrix

<table>
<thead>
<tr>
<th>Commons</th>
<th>Value generation utilises commons; value realisation as commons.</th>
<th>Value generation utilises commons, commoditised value realisation.</th>
<th>Online value generation; offline value realisation.</th>
<th>Online value generation; online value realisation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value generation as commodity production; value realisation as commons.</td>
<td>Value generation as commodity production; commoditised value realisation.</td>
<td>Offline value generation; offline value realisation.</td>
<td>Offline value generation; online value realisation.</td>
<td>Offline value generation; online value realisation.</td>
</tr>
</tbody>
</table>

Source: author’s analysis
The second relevant dimensional distinction is the value form (whether it is a commodity or a common good). The confrontation between commodification and commons is an ancient historical one, but one that has received heightened attention in recent years, not without reason (see for instance Hardt & Negri, 2009).

On the one hand, the Web has enabled the commons to become detachable from its previously mostly locally-bound context, enabling far more people to render voluntary labour than ever before in joint, globally-distributed collaboration and simultaneously allowing many more people to participate in an accessible commons. Two impressive examples of this are the Open Source Initiative and Wikipedia.

On the other hand, the Web has made it possible to extend commodified access to levels that cannot easily be translated into a commodity outside the Internet. Thus, data traces left in the network from its use can become commodities and the objects of lucrative commerce. It is not accidental that the two giants of Web 2.0 – Google and Facebook – are businesses that place indirect, user-generated content at the centre of their business models. ‘Free labour’, whether provided involuntarily or voluntarily, consciously or unconsciously, becomes an object of economic exploitation (Terranova, 2012). However, this does not simply involve a pure and all-encompassing subsumption of various forms of Internet use. Although the ‘audience commodity’ diagnosis (Fuchs, 2012b) unquestionably applies, it is on this basis that the very topical analytical question concerning the emerging new mixed forms of commons and commodity and their linked forms and sources of value creation first presents itself. For example, under Open Innovation processes, voluntary, unpaid customer work can go into the development of products later to be sold as a commodity. It holds true here also, both at the level of value creation and value realisation, that the value form can assume any number of mixed forms between its commons and commodity poles; four ideal types illustrated with generic examples can also be depicted in a two-dimensional matrix (see Table 1, left side), as follows:

- **Value generation occurs when commodity production and value realisation are both commoditised**: content is sold that was produced or purchased as a commodity.
- **Value generation utilises the commons and value realisation takes places as commons**: access remains open to content that was jointly produced or existed as commons.
- **Value generation utilises the commons and the result is treated as a commodity in value realisation**: content is made available for sale that was jointly created or existed as commons.
- **Value generation occurs as commodity production and the result is transferred to the commons**: access is open to content produced or bought as commodity.

Combining the two-dimensional matrices yields a three-dimensional explanatory space (see Figure 2). The resulting constraint model can assist with the question: where is value creation carried out and at which points can it be said that there is a qualitative change because of the Internet? To cite two uniquely-constrained Web examples: with Wikipedia, the digital locale for both value generation and realisation would be online, and the inputs, as well as the created value form, would be commons; with Amazon's
Mechanical Turk platform, the digital locale in each case is once again online, but the value form is a commodity2.

**Figure 1: Value creation and value realisation: 3-dimensional matrix**

However, the world is always considerably more complex than schematic mapping aids suggest. At best, this double four-field matrix and the resulting explanatory space concerning value creation in the Internet economy support an initial and ideal-typical categorisation. This first level of access conceals a variety of different value chains that, in turn, do not run one-dimensionally or in a purely linear fashion and require further differentiation:

An extensive entanglement of value generation and value realisation is found empirically at the first level of differentiation. In the same way, a wide variety of mixed forms of value generation and realisation can be found everywhere along the value chain. In practice, it is frequently not so easy to separate the two empirically (not only in the Internet economy). Market-related information enters into the development of a product, and hence before production, to help ensure value realisation later on. In this way, the presumed future customer benefit of a product – whether in classic market research or in newer approaches like ‘design thinking’ (Brown, 2008) – as a potential requirement for a subsequent value realisation also becomes an orienting criterion.

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2 [The website www.mturk.com mediates so-called Human Intelligent Tasks (HITs), paying $0.5, for example, for filling out a survey that takes five minutes (Berinsky, Huber & Lenz, 2012). The ‘Turks’ mostly originate from the USA and India (Ipeirotis, 2010).]
during the R&D phase that precedes value generation. Alternatively, products are
developed to keep on encouraging new buying impulses, as in processes of planned
obsolescence (Slade, 2007; Spence, Michell & Spence, 2012). At the same time, value
realisation is not necessarily an act of exchange at a particular point in time, but instead
is often a highly complex process. This does not just apply to marketing strategies and
promotional activities, but also to the establishment and maintenance of distribution
networks, the development of new distribution channels and forms, the design of new
pricing and service models all the way through to billing and payment systems. A wide
range of transactional and logistical activities are always interwoven with all these other
activities.

On the second level of differentiation what matters is the virtual and/or material
quality of work. The labour capacity to be expended each time and the tools and items
to be used in work can be just as heavily informatised as the organisational setting
within which the work is performed (cf. Pfeiffer, 2004:137-194). Extracting and refining
oil, developing a piece of software or producing an automotive supplier part, baking
bread, developing a chemical formula or a pedagogic concept – all these are value
generating processes. Not only are the most varied constellations of virtual and material
tools and work items found in all these processes, but the processes themselves occur
in contexts that are informatised to varying degrees and which, simultaneously, are
subject to constantly changing socio-technical possibilities and utilisation patterns.
Tools, work processes and the organisation of labour are not only to be found in the
value generation processes in varied, concurrently dynamically changing blends of
offline/online and commodities/commons but the same also applies in processes of
value realisation. Facilitated by the Web, work processes that enable value generation
or value realisation can combine in new forms while at the same time paradoxically
differentiating themselves worldwide.

These varied, real interconnections can be illustrated by the example of the
Converse Company, whose ‘Create’ website\(^3\) lets customers design their sneakers
customised down to the individual seam. Should a ‘digital native’ customer in Brooklyn
design a totally customised pair of sneakers, this one-of-a-kind item will cost little
more than a normal Converse sneaker and will be in the customer’s hands within four
weeks. But where does the value creation reside under this model? To start with, more
costs are incurred from the outset: first, for the expensively designed and necessarily
technically elaborate website; then, for a custom – and thus hardly highly automated –
production process beyond the online-supported design of the shoe, which in the end
has to be sewn and produced offline. Are the approximately one million offline workers
employed by Nike’s mostly Asian contract manufacturers therefore the source of value
creation?\(^4\) Exploitive as the work in the world’s offline sweatshops may be, our first
priority here is not to point a finger at business strategies that use global inequalities in
wage levels and labour standards for economic gain. In this context, another question

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3 http://www.converse.com/#/landing/create.
4 In 2003, Converse was acquired by Nike, (see http://www.nikeinc.com/pages/manufacturing-
timeline for the numbers). While the company’s Code of Conduct pledges fair and healthy working conditions and
the right to organise for collective bargaining (http://www.nikeinc.com/pages/compliance), Nike’s annual report
proudly proclaims that ‘none of our employees is represented by a union’ (2011:7).
of rather greater interest arises: through whom and how is value really created at Nike? Does the unpaid design input by our Brooklyn customer fuel value generation? Do the 38,000 Nike employees working in development, design, marketing or sales only realise value or do they also generate it? Are Nike’s online sales, already accounting for 15% of all sales in 2010 (Nike, 2011:18), indicators of Web-based value creation?

Unfortunately, it is practically impossible to answer this question based on the available company data. Nothing can be gleaned concerning the composition of the Nike workforce: how many are highly paid knowledge workers? how many work for what wages and under what conditions in the retail outlets? Who conceives the online marketing strategies? who programmes and designs the websites for them? Who programmes the interface that permits a smooth transfer of the customer-generated data from Converse’s ‘Create’ website into the Beijing-based contract manufacturer’s order system? Are these employees in Nike’s e-commerce department, well paid Palo Alto ‘digital natives’ or off-shore IT service providers in Bangalore?

We certainly do not know if the contract manufacturer’s employees work exclusively for Nike and on what terms they do so. Even more opaque is which online/offline logistics systems are needed to process the shoe production itself and the shipment from China to the customer in New York, or the conditions of employment of a crew member on the container ship flying the Taiwanese flag or the UPS driver in Brooklyn who deliver them. If we aggregate the employees of Nike and the contract manufacturers, then, for the year 2010, we have 1,183,207 workers generating revenues of US $19 billion and gross profits of US $8.8 billion. This corresponds to per capita US $16,058 in revenues and US $7,437 gross profit. However, for every Nike employee there are roughly 30 production workers employed by contract manufacturers.

It therefore seems probable that the 30 contract manufacturer employees are more relevant for the value creation – the actual shoe production – while it is more likely to be a Nike employee who realises the value. However, the problem is that we cannot be sure. This is not only because the data are not easy to come by but also because at each point we are dealing with specific entanglements of value generation and realisation and lack of clarity about offline/online and commodities/commons divisions. Nevertheless, each step can be fitted potentially into the three-dimensional explanatory space introduced above. This brings us closer analytically to the problem of the source of value creation but without yet being able to identify it conclusively.

Web, value, labour
The Converse example shows that the Web makes possible what was formerly inconceivable. Customer choice, product development and fabrication data for the shoe’s production process combine; the virtual item of work by the co-developing customer in Brooklyn, i.e. the customised shoe design, blends with the tool – here the detailed production data – of the machine setter in Beijing, for example. Web-based value creation is based as much on the labour capacity of the programmers who have created a suitably elaborated website with virtual tools as on the largely material labour of those sewing the shoe. That which moves closer together in the abstract (customer/producer, development/production) often lies far apart in reality, and not
only geographically. It requires little imagination to sketch out a classification of the various steps based on how they are stratified by such variables as gender and educational level, high or low wages, whether they are based in the USA or in China. It already seems to be regarded as almost a normal side effect of globalisation that poorer working conditions are usually endemic in low-wage countries of the global South. However, this juxtaposition – of the Web-savvy ‘urban lifestyle customer’ on one side and the poorly-paid production worker on the other side of the world – by itself does not yet get to the heart of the matter.

This paradoxical motion of a simultaneous blending and distancing relies simultaneously on both offline and online processes. Moreover, the whole value chain cannot work without either the virtual transmission of data (from Brooklyn to Beijing) or the manifestly material transport (of the completed shoe back to Brooklyn). Even though each is objectively just as important for success in value creation as the other, the current debate about value creation on the Web at best and typically addresses only one side: what is new about value creation is tied to the customer and the website; the programming, production and transportation inputs remain unobserved in a black box. However, it is not only the ‘dark’ side of the material production – that is, the sewing of the sneaker – that is obscured by the beautiful virtual world of the customer-oriented Web 2.0. In some measure so are the inputs for website programming, their marketing and maintenance and the labour that keeps the server and network infrastructures running. We know as little about the degree of automation in shoe production as about the data technology used in coordinating the logistics processes; the customer contact center could be in Dublin or Bangalore and the same applies to the dispatcher’s desk or the interface programmer’s PC.

A common thread runs through all of this dynamic variety: the constant, ultimately, is always human labour, which creates values on the one hand and enables their realisation on the other. Of course, in the virtual realm, just as in classic material production process, a variety of forms of automation and rationalisation of human labour exists. This, however, does nothing to change the fact that the actual value generation, the creation of the new, always has and always will be based on human labour. In the business models and approaches to value creation in the Internet economy described above, however, labour is rarely mentioned. It only appears occasionally, for instance when Caldwell urges readers ‘to reconsider labor as a crucial category’ (2009:167), or when Bowman & Ambrosini (2002) discuss the customer utility newly created through service work. Alternative approaches that refer to the Marxian theory of labour naturally see the source of value creation in human labour – offline as well as online. However, this analysis limits itself predominantly to a discussion of the widening exploitation of labour through the use of social media by end consumers (as in Fuchs, 2012b) – an important perspective, but one which addresses only one dimension of value creation on the Web. One inspiring exception is Huws (2014), exploring living, labour and value as the underpinnings of class in the digital age and developing a schematic typology of paid/unpaid labour and reproductivity/direct productivity.
Conclusion

The paper has taken two steps towards answering the question whether qualitatively new value creation can be said to be taking place in the Internet economy.

First, the critical discussion of the debate in economics found that no satisfactory justification for the assertion that a paradigm shift in the Internet economy can be found. Second, this served as the basis for developing a new analytical insight that, starting from two ideal-typical, four-field matrices, resulted in the development of a three-dimensional explanatory model. Applying this model reveals, on the one hand, a conceptual continuity – since value generation and value realisation are shown to continue as relevant analytical categories for the determination of value creation in both the online and offline economies. On the other hand, the dimensions of the value form and of the digital locale in the Internet economy empirically show a variety of new interactions between value generation and value realisation. Aided by the analytical separation of these two dimensions in the model, it becomes possible to work out what is qualitatively new in the Internet economy. However, as shown by the example of the production of the customised sneaker, it is frequently not possible to track these developments empirically in their entirety and their manifestations become ever more hidden. Finally, the attempt was made to demonstrate that human labour remains the actual source of value creation in the Internet economy as well as elsewhere. This attempt uncovered a peculiar movement: while labour at its core is becoming more important as a source of value creation, on the manifestation level it seems to be fading from view.

It can be concluded that while the heretofore-central categories of value creation and the central role of human labour remain relevant in the Internet economy, they attain a new quality with regard to their visibility. It is not only that the eye is so mesmerised by the colour and variety of online representations that value generation and realisation are rendered invisible. Also concealed is the fact that human labour at many points is, and will remain, the real source of value creation. Human labour remains quantitatively and qualitatively relevant for value creation in the Internet economy. On the one hand, its commodification takes on expanded forms; whilst on the other, more options open up for labour input beyond employment and exchange relationships or to use its results as commons.

A historical analysis, relating this development to broader sectoral shifts, enables us to draw a further conclusion. With the emergence of industrial society, the importance of human labour to value generation became supremely visible societally, while it became relatively less visible for processes of value realisation and, in its non-commodified form of reproductive work, invisible. Although there is an expansion of the importance of labour to value realisation in the still-emerging offline service society, in the sense of societal visibility for production-related value generation, it is receding into the background. Finally, if we interpret the Internet economy as the prevailing expression of the knowledge society, an expansion of value generation and realisation is taking place in it: on the one hand, through increased use of non-commodified labour, and, on the other, through new connections between processes of value generation and realisation. Although human labour thereby taps new and expanded sources of value
creation and is expanding quantitatively along global value chains whilst its importance also increases qualitatively, as a societal motif it remains inconspicuous. The model proposed here cannot and does not attempt to accomplish anything more than to make this visibility analytically recoverable.

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REFERENCES


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