

How is the new economy a challenge to old ergonomics?

François HUBAULT¹, Laerte I. SZNELWAR²

¹Université Paris1 & ATEMIS, France

²Universidade de Sao Paulo, Brazil

Abstract. Service economy¹ is breaking the mould set by the industrial economy. Work changes that accompany it are highly significant and constitute a real scientific as well as professional *opportunity* which ergonomics should not miss.

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1. Argument

First, let's consider the following key point: service was at all times known as a co-product, however, this co-production cannot continue to hold in the framework of a co-ordination determined by the organization. In fact, the recipient escapes from the principle of subordination, in so far as co-operation emerges as a strategic organizational leverage for service economy, with its procession of no lesser strategic implications in terms of attribution, governance, new challenges and difficulties ... The economic theory and management sciences are, in fact, not at all at ease with cooperation since it is, in principle or by nature *unthinkable* in the paradigm of management and control: cooperation belongs to another ontology than the one which thinks in terms of "human factors" ...

Service economy also encounters issues of dimensioning of means, which are more acute than those of the industrial economy:

- service cannot be stored, it is provided under "real time" conditions and thus depends on reactivity and, therefore, anticipation ... which in turn require having to count on much more intangible resources (involvement, listening, commitment, competence, availability ...), which will have to be built up and, upon which it will thus be necessary to accept investing (intangible investment);
- service quality is not easily ascertainable in advance, it is set during the cooperation process between workers that provides it. This setting belongs to a type of activity, namely deontic activity (Dejours, 2009), which proves fundamental to the concrete service economy. Debates on standards are in a such case a major concern for the organization. From this it follows that the assessment of the quality of production, which is so difficult to objectivise, that it emerges as a very sensitive issue. And that calls for a sort of ergonomics, which must be commensurate with such demand.

Predominant in the issue of objectification, is valuation, which is at stake. In fact, service economy is operating in a new monetary environment:

¹ When talking about service we refer to not only the service economy, but also service based dimension of all production organisations, thus including industries.

² This replacement of work by technological devices leads to the reduction in employment (unemployment)

- Intangible investments are not depreciable ... their appraisal calls for means which are different from those based on capital (du Tertre, 2007).
- The valuation of the service no longer depends on creditworthiness only, it also, in a way which is increasingly complex, depends on differentiated and combined modes of *access* (geographical , physical, cognitive , social, cultural ...) ... A very significant outcome needs to be emphasized here: the creation of value takes place at a level that goes well beyond the exclusive scope of the enterprise - there is indeed need to think at sectorial and territorial levels - which invites ergonomists to profoundly redefine the focus of their intervention plans, according to a process, already largely underway, of redefining the scope of performance, mainly through the requirements of sustainable development ...
- Intangible resources (trust, cooperation, relevance, health ... Human "Resources") do not add up like bottles in a cellar or equipment in a facility: their value is only attested during *the opportunities* which reveal them, thereat only. Trust, cooperation, competence ... are attested only during crises where they save the situation: they are "assessable" only in a *setting*. If, in so doing, they are involved in an investment rationale they, at the same time, stand out again from the rationale which applies to capital where valuation is carried out by a computation of the updating of its expected effects over a continuous period of time. Therefore, since evidence of their value can only be given by the *disclosure* of their existence and of their power during an *emerging moment*, improving intangible resources do require managerial actions inspired by a *doctrine* which is capable of finding reasons to undertake such investments that "classic" management is not able to appraise ... (Hubault , 2013)

At the crossroad of these interrogations, is the centre of gravity of an issue that we consider as very sensitive: in the intangible economy, "one" - everyone - is at great pains to know *what performing means*. Value becomes relatively de-indexed from the volume as quality takes on a more sensitive place therein, as the criteria for the description of this quality become less easily explicit and, finally, as the way in which the service is provided affects the content of the very service rendered ...

The latter point is, once more, essential.

- In the industry, production work - i.e. work pattern - does not substantially affect the product; the industrial economic model operates under the assumption of quality whose description criteria are stabilized. Thereby, it means that productivity enhancement strategy applies without fear of quality being affected. Further, this detachment re-emerges in the way the industry innovation is run (Bourgeois et Hubault, 2013; Hubault, 2013): in the industry, innovation on the product - through technological innovation - precedes innovation on the process which, itself, precedes organizational innovation whose role is to translate the brought about operational requirements of the new product on the basis that substitutes some capital for work². All this leads to a situation whereby experience and competence of the staff do generally have no share therein... And, for the remaining share to the experience and expertise of existing workers ... designers have a feeling of disturbing them rather than the awareness of being able to count on them!

² This replacement of work by technological devices leads to the reduction in employment (unemployment) only when consumption ceases to be sensitive to product innovation: until markets household become saturated, consumption offsets - or even more - and therefore masks this effect.

- It is completely the opposite in the service. Provision of service has *an effect* on the very nature of the provided service, since features of the service are *substantially* related to the quality of the relationship between the "provider" and the recipient. Experience, skill, health, subjectivity ... committed to work activity constitute, in this respect, a resource for organizational innovation that is de-indexed from technological innovation - even when the latter constitutes material support for the service - : in this case, since innovation process *precedes* and *conditions* product innovation, competitiveness of organizations mobilises activity *otherwise* ... and employment too: service-based organizational innovation is no longer based on classical dynamics of Capital/Work substitution... except in the case of an industrialist conception of service where technology, in support of service, overrides, through the standardization of service provision, the content of the service *relationship* itself ...

We are, in this respect, at the heart of the issues of ergonomic intervention in organizations where the service dimension is becoming more sensitive.

- The dynamics of the service and, along with it, the cooperation, disorients governance mechanisms, which lay everything on the prescription. It is for lack of knowing neither what to prescribe nor how to enumerate, that organizations are taking over through the strengthening of control on purely financial indicators. Thus, our argument is that the "*financiarisation*" of the organization has grown amid loss of the legibility of the contribution of work to value creation: contrary to what is usually said, this phenomena does not eliminate work, rather it is the elimination of work that led to "*financiarisation*" when organizations that have lost track of work and which can no longer count without manipulating the reality ...
- The emergence of service and cooperation place management description methods of work in a crisis:
 - the Prescribed/Real gap becomes more enigmatic, service-based relationship of work blurs the understanding of the relationship of subordination with the emergence of (a) the recipient within the prescribing body and (b) the public space in the work situation;
 - the intangible dimension puts modes of the description of value creation in crisis, (a) at the level of the evaluation methods faced with the evaluation of the non-measurable and the uncountable, (b) patterns of division of labour faced with the issue of cooperation, (c) modes of running production faced, with the need to rethink the relationship between data, information –i.e. the interpretation of data in terms of the aims of action-, and knowledge – i.e. the possibility to generalise it.

To put work in the limelight, as the solution to problems of the creation of value, it is now, *more than ever before*, necessary to bring about further clarification on the relationship Subjectivity - Activity - Performance.

In other words, rethink what Activity means imply:

- going beyond the demarcations between physiological, psychological, psychical and social dimensions because in this division, the body *disappears*;
- better normative references on which service relationship should be able to regulate activity: to match *what I do* with *what it does*, now and tomorrow, here and elsewhere in the world ... – i.e., to the world, to others (to the recipient but also the values that are involved in a relationship with the him/her), to the culture and the society (the "shared world", the "living together")-, it calls for considering the running of the activity and the

evaluation of its "performance" in the perspective of Sustainable Development extended to intangible dimensions of activity: it is, indeed, precisely because the explicit and formal prescription for this activity becomes more complicated, if not impossible, that activity needs to lean on an institutional structure that allows it to conduct itself, find its bearings and its way.

- placing activity in the perspective of emancipation rather than of adaptation, which demands to extend the relationship between subjective value and economic value, to the *political* value of the activity.

It is important to stress here that these reasons contribute to proposing quite a different course in the evolution of ergonomics from that which supports the "Human Factors" approach, which encounters increasing support in national and international structures responsible for the evolution of the discipline and professions referring thereto...

Indeed, the rise of service-based economy brings ergonomists back to a front they had somewhat neglected, but it also reminds them of it *differently*: prescription returns as a more sensitive topic than ever before, both in terms of health and of efficiency ... but it is calling for a complete overhaul of ways of thinking, implementing and evaluating.

- In the service economy, prescription becomes much more blurred, work evaluation criteria more uncertain and evolving and the shaping of value goes beyond the spatial and temporal boundaries of the employment contract, both by the means provided by NTIC to develop business outside of the company ... and the need for the "worker" to lay down prescription in cooperation with the recipient, in a relationship that explicitly, partly at least, breaks loose from the wage relation of subordination ...
- This explains why the "modern" organization is directly turned towards subjectivity. However this recognition remains purely instrumental and it is building up at the same time as institutional systems, necessary to regulate it, deteriorate: thence overexposure and exploitation of subjectivity combine to raise new questions, to which ergonomics has no chance of finding answers if it does not carry out an overhaul of activity *at both ends* : on the side of subjectivity by clarifying in depth how ergonomics consider the aim of activity in relation to demands of life (Barkat , 2013; Sznclwar & Hubault , 2013; Clot, 2010; Dejourns , 2009) and, on the side of the economic model that has to draw so differently on the intangible economy (du Tertre, 2011).

Service economy requests a type of work which is considerably different from that prescribed in the industrial economy:

- The presence of the "recipient" (client, patient, user, ...) in a provision system based on co-operation brings in a third party in a relationship which was previously set up without it: the prescriptive function of the recipient goes completely beyond the relational context of prescription and, consequently, change, as much, the position of ergonomics in the development process of the task. It is worth adding that through the relationship which is physically established with third parties who escape from the subordination link, dialogue becomes concerned with the relationship linking activity with the society, culture, morality –i.e. axiological values ...
- Service is always carried out under a tension which is not new in itself but completely renewed in issues that it carries: between the classic (the logic of service standardisation) and the specific (the logic of service relationship), service depends on the adjustments, different in each case, between terms which tend to rise to extremes. Tendency of extreme standardization (proceduralisation) on the one hand, and extreme care or even compassion,

on the other hand. Occupation thus emerges as the ability to define the limits of questions-interrogations hesitating between *dimensionless quantities* - either removing all of them or pushing them to infinity ... This is the real origin of the well-known psycho-social risks: in the absence of available referral institutional structures which can *dimension* what is *right* to do, the activity takes place under the risk of being accused of either doing too little or doing too much, which can come from all sides, from all stakeholders and for all the reasons.

- The temporality, duration, the timescale horizon is a specific issue in service dimensioning. Services to individuals in the public health fall under a timescale that cannot be determined in advance, relations engaged may last a lifetime. The prescription is, in such a case, confronted with real management dilemmas...

2. Concluding remarks

The currently available knowledge from ergonomics, psychodynamics of work, clinical of work, ergology and, more globally, from all fields which are directly involved in the *work activity* converges to emphasize that it is not possible to consider the human being as crumbs, by erecting demarcations between physical, cognitive, psychical, social and psycho-social dimensions... Whatever their positions in companies and in the society, *workers* are complete subjects, in their own right, such that ergonomics has the duty to hold the view that producing is all the same as building and developing peoples lives, individually and collectively. Whereas this orientation is not necessarily new, its topicality –its necessity and therefore the challenge to make internal reforms that would allow the discipline to address the rising issues– is at the heart of the perspective that ODAM should, in our opinion, endeavour developing in order to place ergonomics as a resource of genuine societal changes.

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