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**Programme “Society and Future”**

# **The second order digital divide**

*Synthesis of the research report*

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## THE SECOND ORDER DIGITAL DIVIDE – SYNTHESIS

In Belgium, the first order digital divide, i.e. the gaps between different population groups according to their access to computers and the Internet, has been significantly reduced over the last five years, although it has not yet been eliminated altogether. As in other European countries, the continuous expansion of information and communication technologies (ICT) has revealed new disparities, this time in the manner in which ICT are used. Many authors have called this “the second order digital divide”. This concept assumes a gradual shift of inequality, from ICT access to ICT use. This assumption is often raised in scientific literature and in some national programmes for digital inclusion. However it has been studied very little from an empirical angle. The methods used to study disparities as regards ICT access, i.e. essentially various statistical surveys, are less relevant when it comes to understanding the disparities in terms of usage and to link them with issues of social inclusion or social inequality. That is why this research is based on a qualitative approach, relying on the stories and the perceptions of users. This choice required the construction of an adequate conceptual framework, centred on the concept of usage. In this research, the term *usage* not only designates the use of ICT but also the behaviour, the expectations and the perceptions of users.

### **An overview of knowledge concerning the second order digital divide**

The first studies on the concept of the second order digital divide are quite recent (since 2002). They are based on the observation that the progressive democratisation of Internet access is not a sufficient condition for the development of ICT use by all and for all. New disparities were created among users. One hypothesis advanced by several studies is that these new divisions are primarily related to an unequal distribution of digital skills. The distinction between instrumental skills, informational skills (related to the format and the substance of digital content) and strategic skills (meaningful use in function of a purpose) highlights the growing importance of the latter two categories, as the supply of services develops and usages become more diverse. The appropriation process for ICT moreover requires a series of core generic competences including language skills and an aptitude for lifelong learning. Next to these cognitive resources (digital and generic skills), social resources, i.e., the resources of one’s network or professional and personal environment, also play an important role in the development and diversification of ICT usage.

A conceptual shortcut is established as it were: the second order digital divide is largely made up of inequalities in skills. In order to bridge this gap we need to start building skills through continuous training programmes and support programmes for users, which are primarily aimed at social groups that have been identified as potentially disadvantaged in terms of social and cognitive resources. This is the option chosen in several national action plans for digital inclusion, namely in Belgium, Great Britain and the Netherlands.

While the theory of the second order digital divide refers to the concept of usage, the measurement of this divide is all too often limited to parameters associated with use. The surveys concerning the use of ICT provide a series of descriptive elements related to user

practices. It is thus possible to paint a statistical picture of the diversification of the conditions and areas of ICT use.

This statistical portrait teaches us that once the barrier of access has been scaled people start using their computer and the Internet on a regular and even assiduous basis. Internet is mainly used at home. While most Internet users routinely use mail and browsers, the other areas present more contrasting user patterns. Generally the Internet and computers are used most frequently for communication and daily life information services. Use for audiovisual entertainment purposes is less widespread, especially in the 25+ category. Only 20 to 30% of users use ICT for learning, culture, interaction with public services and online commerce. The production and sharing of online content is still in an early stage. Surveys also show that the vast majority of users have acquired their ICT skills through practice and self-study. School education only plays a significant role for the younger and the highly educated. In general people make use of the possibilities of ICT in a rather limited and variable manner.

### **The elaboration of a conceptual framework focusing on usage**

Usage, i.e. the social practice built up ICT use, is at the heart of this conceptual framework. The concept of usage has been operationalised through three specific concepts: the usage territory, the usage framework and the user trajectory.

- *The usage territory* is characterised specifically by the nature and extent of areas of use and their intensity (frequency and duration). This helps to understand the manner in which ICT is effectively incorporated in daily life.
- *The usage framework* is a broader and more abstract concept, which describes the type of social activities in which the use of ICT is incorporated. The place and meaning of usage, in personal and in social life, are essential elements of the usage framework. ICT usage takes on a symbolic, identity or utilitarian meaning, which can change over time.
- *The user trajectory* describes the transformation of the usage territory and the usage framework over time. Special attention is paid to the dimension of freedom or constraint in the user trajectories as well as to the dimension of meaning and motivation.

The aim of this research is not to study ICT usage per se, but to relate this usage to social issues, which are often presented in terms of a risk of inequality or exclusion. It therefore became necessary to precise our reading frame of the social issues related to the digital divide.

- *Inclusion or social integration*. This is a gateway for thinking about the issue of “living together” in our society and the risks of marginalisation as a result of the use of ICT. In this study we have taken into account five areas of inclusion: productive activities, social activities, consumer activities, political or civic activities and personal development.
- The *digital inequalities* are inequalities in relation to the social norm of the information society. This norm primarily requires ICT access for all and ICT use by all. This norm of *generalised access* requires that everybody acquires basic digital skills, or digital literacy. Beyond the requirement of access to ICT, the norm of the information society also

advocates the adoption of certain *models of ICT use* that are primarily related to the professional sphere, to the sphere of public services, and to the sphere of consumption, in response to economic and institutional expectations. Finally, next to these expectations in terms of use, the norm of the information society can also be translated in terms of *norms of individual and collective behaviours* in the areas of education, communication and entertainment for example. The social norm of the information society is the backdrop against which the user trajectories are developed.

- *The resources, capabilities and choices.* Material, cognitive and social resources, which are traditionally mentioned in theories related to the digital divide, largely coincide with the classification of three types of capital, as proposed by Bourdieu: economic, cultural and social capital. The approach in terms of resources or capital however seems insufficient. It was completed by the concept of capability, which was borrowed from Sen's work. This is the ability of a person to convert his skills and resources into outputs (results, accomplishments) in a given context of opportunities. According to Sen, the uneven distribution of capabilities is at the heart of social inequalities.
- *Vulnerability.* The notion of vulnerability implies the anticipation of risks that an individual runs of seeing his living conditions or personal circumstances degrade. The digital vulnerability however also encompasses a threat, related to the imposition of norms and behaviours that are typical of the information society and a capacity of response, which consists of taking advantage of the opportunities offered by ICT to transform them into effective uses, and which enable an individual to protect him/herself from these risks.

This conceptual framework has thus been considerably expanded compared to the initial approach in terms of skills and motivation. Compared with the challenge of social integration, the conceptual framework now focuses on *vulnerability*, rather than on inequalities, and highlights the dialectics of opportunities and risks.

### **The development of a creative methodology**

The conceptual framework focused on usage feeds the empirical part of research. The working method is primarily based on a qualitative approach, through the design and implementation of semi-directive in-depth interviews, including a biographical dimension, with computer and Internet users; 68 interviews, which on average lasted 1 to 1.5 hrs, make up the original empirical basis of this research. The individuals were selected according to a predetermined set of criteria, in accordance with the objectives and hypotheses of the research. The latter have been translated into a common interview guide.

The analytic phase seeks to grasp the meaning of these individual experiences and their relation with the general characteristics of a social environment in the disparate proliferation of personal stories of ICT users. In the research methodology the use of a typological analysis was deemed necessary, appropriate and useful. Necessary because typologies help reduce complexity. Appropriate because it helps to make sense of individual stories in a rational knowledge project. Useful because the typology is a heuristic tool that serves as an intermediary stage between an initial research question and future conclusions.

A suggested typology of users was elaborated. It is organised around two dimensions, which appear to differentiate the individual sets of trajectories: the motivation or initial impetus (more or less free or constrained) and the perceived usefulness (from low to high). More than sociodemographic variables these dimensions contribute to understanding what these individual trajectories have in common and how they are fundamentally different.

In a second stage, a cross-sectional analysis was used to test the relevance of the classic sociodemographic variables for interpreting these user trajectories and for assessing the importance of other parameters such as available resources (economic, social or cultural), the symbolic value and the meaning of ICT usage, the attitude to learning. This contributes to the development, in a third stage, of an analysis in terms of social integration and vulnerability, and subsequently to identify the trajectories and the profiles of individuals who are more or less vulnerable in their usage environment.

### **A typology of users**

Based on an analysis of the interviews a typology of ICT users was established. The two core dimensions of this typology are initial motivation and perceived usefulness.

- *Motivation or the initial impetus* refers to the more or less obligatory nature or the elements (or contextual factors) that inspire an individual to become interested in computers and/or the Internet and to become a user. The motivation or initial impetus was characterised by three levels of constraint: high, medium, low.
- *The perceived usefulness* can be deduced from the usage framework – specifically the meaning attributed by the individual to ICT usage – and the usage territory, i.e., the types and the nature of the ICT uses. Usefulness is qualified as “perceived” because it is not determined by the researchers, in a normative manner, but is expressed instead by the user. Three levels of perceived usefulness have been differentiated: high, medium or low.

These two elements – the motivation or initial impetus and the perceived usefulness – seem to structure the user trajectories, in terms of attitude towards learning, a quest for autonomy and the ability to assimilate the behavioural pattern that expected from a user who is considered to be “integrated” in the information society. The combination of these two dimensions helps to identify eight ideal types, which are differentiated by the starting point of their trajectory (the initial impetus) and a point of arrival (the usage territory).

		PERCEIVED USEFULNESS		
		High	Medium	Low
MOTIVATION / INITIAL IMPETUS	Strong constraint		<b>Type 1</b> THE CONSCIENTIOUS APPRENTICE	<b>Type 2</b> THE DISTANT SKILFUL USER
	Medium constraint	<b>Type 3</b> THE CLAIRVOYANT FOLLOWER	<b>Type 4</b> THE ASSIDUOUS USER BY DEFAULT	<b>Type 5</b> THE RESIGNED SCEPTIC
	Low to no constraint	<b>Type 6</b> THE EXPERT ROUTINE USER	<b>Type 7</b> THE SEDUCED CURIOUS	<b>Type 8</b> THE CONFORMIST CONSUMER

The distribution of individuals among the different types helps differentiate certain intuitive hypotheses as regards gender, age or even the level of education of users, because there are no cause and effect relations between certain sociodemographic characteristics and the fact that a user belongs to a given category. The main characteristics of the eight types are as follows.

- *The conscientious apprentice* is characterised by a conscious desire for professional integration or stabilisation and a need for social recognition. He has a positive and utilitarian relation with ICT but ICT is a controlled and limited aspect of his existence. He likes to learn but requires support and guidance. This type of profile is not particularly different in terms of age, educational or activity level variables. It may perhaps be somewhat more feminine, professionally active and middle-aged.
- *The distant skilful user* has had to familiarise himself with ICT for professional reasons. His usage territory of ICT is extended at work, but limited at home. The professional use has little impact on his private life because this type of user does not feel the need to use ICT at home and does not see why he should. This is a typically feminine profile, professionally active, older, from all levels of education.
- *The clairvoyant follower* adopted ICT under gentle pressure from his or her entourage; but this quickly turned into a personal interest. ICT and above all the Internet provide support for and amplify existing activities: they attribute positive symbolic value to ICT but in a controlled space and with a reflective attitude. A concern for autonomy and a proactive attitude also characterise this type of profile, which is essentially masculine and includes people who do or do not work. On average these users are older although this category does also include some people younger than 30.
- *The assiduous user by default* adopted ICT during his school years but the need for professional insertion constituted the decisive impetus. He uses the Internet in all its forms

and communicates a lot to break free from his isolation. He attributes considerable symbolic value to ICT: it is his link with the world. This profile is usually young, socially vulnerable, often in situations of transition and with a relatively low cultural capital.

- *The resigned sceptic* started using ICT without great enthusiasm, under moderate pressure from his professional or private entourage. He uses ICT sparingly. His learning process is often laborious, not very autonomous, dispassionate and without underpinning project. He is a resistance fighter who has given up but who is aware of his withdrawn position. This user sometimes attributes negative symbolic value to ICT. This type of profile is typical of all ages, it can be feminine or masculine, active or inactive. It is essentially marked by a rather high cultural capital (the vast majority of these persons have a degree in higher education).
- *The expert routine user* is an individual whom early familiarisation and sustained curiosity have led to extend his area of use, which continues to grow. He is an assiduous user and his use has been incorporated in his daily life. This user attributes positive symbolic value to ICT in combination with a proactive attitude. This profile is typically young (most users are under 30), at work, both feminine and masculine, including many graduates of higher education but also a significant number of people with lower education levels.
- *The seduced curious* is moved by a desire to discover ICT, which progressively take on a meaning in his daily life. He tinkers around with ICT, which take on a highly positive symbolic meaning to him. He is independent. This profile is rather masculine and active, but there is no distinction in terms of age or level of studies.
- *The conformist consumer* expresses his need for social affiliation through the ownership of symbolic high-tech objects. His use of the Internet is intensive and concentrated in the areas of entertainment and communication. ICT is not part of his professional environment. He does not feel the need for training. This type of profile has a lower cultural capital (no graduates of higher education). Age is also important in this category, with the majority aged 30 or less.

### **An attitude to learning that is conditioned by perceived usefulness and the meaning attributed to ICT usage**

ICT skills are at the heart of several studies of the second order digital divide. Confirmed users acquire and develop their ICT skills through different channels and based on different behaviours: they learn about ICT at school, through formalised arrangements such as a qualifying job training or training organised through an organisation, but also through informal types of training, i.e., on the go, at work or through self-study. People frequently combine different types of training, whether formal (at school, specific training) or not (on the go or self-taught). Four types of attitudes to learning can be distinguished:

- *A positive and proactive attitude to learning.* Here we find the clairvoyant follower, the expert routine user, the seduced curious and the assiduous user by default, i.e. 55% of those persons interviewed. They combine learning on the go and the use of targeted training modules. They are independent and capable of making choices. They know where to go

and who to contact to acquire the knowledge that they are looking to acquire.

- *A positive but reactive attitude to learning.* Here we find the conscientious apprentice and the distant skilful user. Their learning process is characterised by guidance and support from their professional environment or through targeted training.
- *A distant attitude to learning marked by disinterest.* Here we find those users who are satisfied with the achieved level of skills and who do not ask themselves whether they need to learn more. They are the conformist consumers. To them the computer is primarily an entertainment tool, which does not require a learning obligation.
- *A superficial attitude to learning with a low return.* The resigned sceptic has a special attitude to the learning of ICT skills. Although he has good cultural capital, he laboriously progresses and constantly finds himself relearning the same basic skills. There is little investment in learning because he is not motivated by what could be his personal gain, whether in his personal life or at professional level.

The perceived usefulness of ICT use, as well as the symbolic value attributed to ICT will shape and condition the individual user trajectories and their attitude to learning, even more than their educational level or more generally, their cultural capital.

### **Varying impacts in terms of social integration**

Five key areas of social integration have been retained in the analysis: social activities (interaction with family or friends, or within a cultural group or community); productive activities (paid work or training); political or civic activities; activities related to private or public consumption; personal development (specifically autonomy and self-esteem).

In the trajectories that were analysed these areas appear to interact with ICT usage but in a rather uneven manner and never concomitantly. The standard profile of the “good student of the information society” is that of an individual who searches for, creates or exploits positive interactions between his use of ICT and his accomplishments or opportunities in each of the five key areas, which determine his level of social integration. Only one group of users – the clairvoyant followers – approximates this ideal user, i.e., 13% of the sample. In many cases only two or three areas of social integration are significantly amplified by ICT use. To sum it up:

- All ICT users tend to use ICT for communication purposes but the intensity of this use is quite different. Only in some cases is ICT used to underpin an individual’s social activity.
- The productive activities will be significantly underpinned by ICT use among users whose trajectory is rooted in a professional environment.
- At political and civic level, the use of ICT can amplify or facilitate certain pre-existing actions or commitments but will not bring about or demultiply participatory or civic dynamics.
- Consumer activities are dominant among conformist consumers. For many others they transform consumer behaviour patterns but do not take priority in the use of ICT.
- Personnel development is without a doubt the area which is most impacted by the use of ICT, in varying degrees.



The diversity of these influences in terms of social integration shows that there is no pre-existing causal relation between ICT use and better opportunities or performance in the five key areas of social integration. The relation is different depending on the types of users.

### **Indications of vulnerability that are typical of certain types of users**

The concept of vulnerability was used to develop a dynamic approach of the exclusion/inclusion binary in the analysis of user trajectories. Various criteria were used to assess the level of vulnerability within these individual trajectories:

- *The level of autonomy*, i.e., the capability to manage alone (in relation with the level of skills) and the capability to make decisions as regards learning. In addition to a certain degree of proactiveness, this includes the capability to identify the appropriate people or places, to establish a diagnosis and to project a future for oneself as an ICT user.
- *ICT skills* include the determination of a threshold which an individual is deemed capable of achieving and even progressing, as well as the attitude to the learning process, views on training and the capability to teach oneself ICT skills.
- *Available support* relates to all the resources that can be mobilised to help solve any difficulties that one may encounter.
- *Risk behaviour* refers to potentially damaging behaviour such as Internet dependence, deviant behaviour, compulsive purchasing, financial risks.
- *The symbolic value and the meaning* attributed to ICT also contribute to favouring or hindering an individual's relationship with ICT and his capacity to make use of it in line with his expectations and in line with a minimum norm of integration.
- *The capability to make choices* and to leave one's mark on one's trajectory refers to the capability to choose uses that contribute added value to one's individual existence, to the capability to make consistent choices in terms of learning and the acquisition of knowledge as well as to the existence of a critical distance and a reflective attitude to ICT use.

The resigned sceptic and the conformist consumer (which together make up 31% of the respondents) are the two types that are the most vulnerable. Both have limited ICT skills and are not very autonomous but they have access to support (children, friends or colleagues). They distinguish themselves because of the value that they attribute to ICT. The resigned sceptic does not attribute much value to ICT and does not understand their relevance. He tends to withdraw and thus exposes himself to professional marginalisation because often these people work in professions that will be transformed by ICT sooner or later. Generally speaking, these people have an average or even high cultural capital and it is reasonable to suppose that they are capable of learning once they have gotten over their reticence. The conformist consumer, on the other hand, attributes more value to ICT but feels that the computer and the Internet are essentially for entertainment purposes. Their vulnerability is related to their low capability for making choices that will personally enrich them. This category also seems more exposed to risk behaviour.

It is difficult to see the world of ICT users in terms of groups that are characterised by socio-demographic variables, when we look at this world in terms of vulnerability, however, we see a number of risk factors rise to the surface. The aforementioned vulnerability factors are most frequently found among women, among economically inactive people, and among young people, who are more frequently found in vulnerable groups. These trends emerge from the qualitative analysis, not from a statistical measurement.

### From analysis to recommendations

The outcome of this study lead us to question two types of policies that are frequently implemented in digital inclusion programmes: policies aimed at target groups and policies aimed at the development of the supply of services.

- Most of the digital inclusion policies, whether in Belgium or abroad, identify “risk groups”, which require priority and specific measures: senior citizens, jobseekers, people without economic activity, people who live in rural zones, individuals and households with a low income, ethnic minorities, disabled persons as well as the inequality between men and women. The results of this study show that these target groups are not necessarily relevant in terms of the second order digital divide.
- The policies related to the information society often are based on the assumption that accelerated development of the supply of online services and contents will *ipso facto* result in a sort of democratisation of the use of ICT. The results of this study show that users are confronted with an increasing diversity as regards service and content providers and that they do not necessarily make their choices within the frame created by a policy designed to promote this supply of services. Users do not necessarily adopt these pre-formatted behaviours. User practices become less sensitive to the organisation of supply.

Next to this the study results also reveal that digital inequality is no longer married to social inequality. Our empirical work revealed situations of digital vulnerability without social vulnerability as well as other situations where the lack of digital vulnerability can co-exist with a high level of social vulnerability. Digital integration does not necessarily guarantee social integration. This conclusion confirms that it is necessary to ensure that digital inclusion policies overlap with social inclusion policies, especially when it comes to the job market integration, in education and in media education. It is insufficient to only concentrate on technological aspects.

The study results also show that certain causal relations, which are frequently used in the frame of the first order digital divide, must be nuanced when dealing with the second order digital divide. It is difficult to imagine the worlds of users in terms of well-defined risk groups. However the main factors of vulnerability – autonomy, skills, social support, symbolic value, capability to make choices – are often distributed unevenly in function of gender, age and professional activity.

### **The need to rethink the targeting of public policies**

Today's government policies are designed to implement various forms of institutional support to encourage ICT use: training, awareness campaigns, public access (among others in public digital spaces), certain types of financial or tax aid, a legal frame for online services, services of general interest, etc. Some forms of institutional support are designed for everybody while others are aimed at certain target audiences. The way in which target groups are determined must be rethought in function of the aforementioned conclusions.

The promotional chat about the supply of services will not convince users who feel a limited usefulness to ICT or who are reticent about using ICT. The message as regards the "absolute necessity" to use computers or the Internet in function of external constraints will not convince them either. The new needs that may attract this type of user are the increased communication possibilities, the fact that one can make oneself more visible to others and thus be more available, to join groups with the same interests.

In the case of people who are not very motivated to extend their usage territory, the customary promotional chat will not have an effect either. A good way of convincing these users to extend their area of use is to confront them with situations where ICT is integrated as an option without obligation, in activities related to other interests, such as culture or creative leisure. This recommendation also applies to people whose computer and ICT use is not anchored that much in their private life.

In the case of people who are interested to learn but who are not very independent, one should respond to their training needs but move beyond the threshold of digital literacy and instrumental skills or basic IT. The development of support centres or relay structures that can help people develop new skills and new uses at their own behest but with guidance is well suited to this target audience.

In the case of people whose use of ICT is confined to their professional environment, a pragmatic approach is necessary to show them the comparative advantages of ICT use in their daily life. This target audience may also be sensitive to messages that explain that ICT use offers possibilities for emancipation and greater freedom because this group is capable of taking advantage of opportunities when they see them.

In the case of the target audience which displays a possibility of compulsive behaviour, warning messages, paired with concrete examples, are relevant. These warnings should focus on the risk of addiction, of grafting and excessive debt. In the case of this target group it is important to continue to develop a legal frame to protect these consumers as well as information campaigns designed to inform these consumers. The new applications of web 2.0, especially the social networking sites, have to be included in this legal frame and in information campaigns, in addition to the traditional issues related to e-commerce.

Finally those target groups that do not run a vulnerability risk may also be targeted by policies that are designed to improve everyone's situation. These include tariff policies for Internet connections, downloading and the cost of online services, and a regulatory policy as regards the

legal frame for online services and the new applications of the interactive and participatory Internet.

### Final reflections

At the end of this study it is clear that the analysis of the second order digital divide is still largely reliant on conceptual frames and evaluation tools that have been put in place to understand, measure and reduce the first order digital divide. In a country like Belgium, however, and notwithstanding the persistence of a number of inequalities as regards access, the share of the population which is familiar to a certain extent with ICT and which regularly uses ICT, whether they like it or not, is on the rise. By analysing the possibilities for integration and the vulnerability risks among people who already use ICT, this study is *de facto* aimed at understanding the prospects for the future. At the same time, the results of this study show that ICT use is very diversified and that there are various user trajectories; they use different roads and lead to different destinations. The trajectories are less determined than foreseen by sociodemographic variables that explain the inequalities as regards access. Other markers, related to user situations, influence these trajectories: motivation, the place and meaning of use, the perceived usefulness, the attitude to learning.

Through the knowledge overview that has been established and the original empirical material which was gathered and interpreted, this study to a certain extent has become a point of inflection, or even a turning point in the reflection about digital inequalities.

Up until now policies regarding digital inclusion were often of a missionary nature. They were designed to convince citizens of the individual and collective benefits, of the necessity to conform to the social, political and economic norm of the information society, and most of all of a necessary democratisation of ICT access. By showing more interest in a target audience which already incorporated ICT in their daily life, to various extents, this study transcended the issue of “digital proselytizing”. It reveals several contrasts between the user trajectories, usage territories and usage frames on the one hand, and the rationalising and somewhat euphoric vision which motivated the original promoters of the reduction of the digital divide. The empirical results show that digital inclusion does not necessarily guarantee social inclusion; the relation is more nuanced than this. The appropriation of ICT does not automatically lead to an improvement of all aspects of social integration but rather has a tendency to underscore the strengths of social participation and emphasise its weaknesses.

The outcome of this study also helps trace the contours of a new, more nuanced understanding of “digital vulnerability”. This vulnerability is influenced, in part, by such factors as age, gender, level of education but also by other vulnerability markers: the level of autonomy, the level of ICT skills, the available social support, the sense and symbolic value attributed to ICT, the degree of exposure to risk behaviour, the capability to make choices and to keep control over one’s own user trajectory. In this sense, this study brings new insights, as most of the existing studies concerning the second order digital divide mainly focus on digital skills and social resources. The outcome of this research pleads in favour of a resolutely cross-sectional approach to combating digital inequalities.

**Reference of the final publication (in French):**

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