

**10th Meeting of the Advisory Expert Group on National Accounts,  
13-15 April 2016, Paris, France**

**Agenda item: 4**

**The Internet economy**

Introduction

This paper presents the challenges which the internet gives for national accounts, linked to the appearance of new products (part 1) and of new business models (part 2), and examines alternative recording treatments of media services (including internet services) in national accounts (part 3). It is not intended to be a comprehensive review of all possible impacts of the internet on national accounts, and it would certainly be welcome that AEG members identify other areas for further research.

Documentation

Paper: The Internet economy

Main issues to be discussed

The AEG is requested to consider the following

Under part 1:

- Do you consider that the development of the internet generates new types of economic activities that would require to revise ISIC/NACE? For instance, should publishing activities on the internet be classified differently from publishing activities in print version?
- Or do you consider that, as the internet is only one means of producing and transacting goods and services, there is no need to revise ISIC/NACE? For instance, should Uber be treated as providing the same service as a traditional taxi company?
- Do you consider that shifts from physical shops to internet purchases should be treated as a volume effect in the national accounts? What further factors might need to be taken into account?

Under part 2:

- Do you agree that, from a theoretical point of view, national accounts concepts capture these new business models, as there is nothing specific in these models which would be outside the scope of production ?
- Do you consider that the development of internet generates specific measurement issues for national accounts, beyond the overarching globalisation challenges discussed elsewhere, and perhaps linked to the development of free and small scale services ?

Under part 3

- Do you agree with the principle of imputing - at least in satellite accounts - an additional output (or a decrease of intermediate consumption), income and consumption in order to show within household final consumption expenditure the actual utility of media services?
- If yes, do you agree to value the additional household final consumption expenditure by the net receipts of advertising for media? Do you think that this calculation would imply defining in classifications additional products associated with advertising within each particular media?
- Do you agree with one of the three alternative recording methods proposed? If yes, with which one? What are your views on the practical issues and way forward coming from the different alternatives?

# THE INTERNET ECONOMY

*Document prepared by Christian Ravets, Eurostat*

Information technology has introduced a profusion of new products, processes and market channels. internet advertising is growing rapidly. Continuous innovation based on the internet creates measurement challenges for national accounts, as many new services on the web appear to be "free" and may not be properly identified in the national accounts. The difficulty to capture what happens on the web may lead to an under-estimation of economic activity. On the other hand, the internet may also create opportunities for identifying economic activity which had previously gone unreported or been estimated.

## 1 – APPEARANCE OF NEW PRODUCTS

Traditionally, transactions on the internet are grouped into three categories :

- Business to business (B to B), with more and more companies conducting business on-line, in particular in the areas of direct marketing, selling, transport and storage, banking and billing, insurance. The selling of internet advertising is an important type of B to B transactions undertaken by media companies ;
- Business to consumers (B to C) is quickly expanding as customers appreciate the emergence of specialised on-line shops. Internet shopping widens choice through access to a larger range of sellers, because niche sellers of specialised products can profitably conduct business on the web. A greater variety of similar products is offered through a product differentiation strategy in which firms develop differences between their products and those offered by competitors, and propose to consumers to “personalise” their purchase ;
- Consumers to consumers (C to C) relates to sales of goods and services among consumers. In this market, specialised sites (such as Amazon or e-bay) offer goods and services to assist consumers interacting with each other over the internet in new and used goods and services.

Further the rapid development of Parecon (participative economics) - also called the "collaborative" or "sharing" economy - permits households to easily get into contact and save money. These services are partially free of charge for users, as a small percentage of what customers pay goes to the companies concerned. Some examples are accommodation rental services (AIRBNB), ride sharing (BLABLACAR), and crowdfunding (KICKSTARTER).

The internet also allows the appearance and development of new goods and services, such as open source and cloud-based IT software and the management and analysis of big data. Sometimes it involves intellectual property rights issues, for instance in the musical world.

The internet modifies the quality of existing services, for instance if we compare Uber with a traditional taxi, but these quality changes are difficult to capture: is it still the same product with a cheaper price or a new product ? We observe the emergence of new activities, new

products and more varieties of similar products. A key question to ask is are these changes sufficiently reflected in the existing industry and product classifications ?

The latest revisions of the ISIC/NACE classifications introduced a class 6312 for "Web portals" and a class 479 for "Retail sale via mail order houses or via internet".

The internet is also mentioned in several other ISIC/NACE categories :

- Class 4610 (wholesale on a fee or contract basis) includes activities in bringing sellers and buyers together, "including on the internet";
- Division 58 (publishing activities) covers, without differentiation, all the visible forms of publishing "in print, electronic or audio form, on the internet, as multimedia products such as CD-ROM reference books, etc.... ". The split between print and on-line books /newspapers / periodicals is only available in CPC/CPA at the 5-digit level (example : 58.11.1 printed books and 58.11.3 on-line books);
- Class 7310 (advertising) does not differentiate if advertising is placed in print newspapers or periodicals, on radio or television, or on the internet : all these forms of advertising are included together. The split is only available at the 5-digit level in the product classifications.

It can also be noted that in division 85 (education), the internet is often mentioned as a mean of education, among others.

From this analysis, it appears that the existing ISIC/NACE classifications cannot straightforwardly provide an indication of internet developments, because this is not considered to be their purpose. The internet is implicitly considered only a means, among more traditional ways, to transact the sale of specific goods and services. Units that sell goods and supply services exclusively through the internet are classified to the industry of their principal activity, therefore units engaged in e-commerce can be potentially be found in any industry of ISIC/NACE.

This rule has an exception, already mentioned earlier : in retail trade, units that undertake their sales exclusively or predominantly through the internet are classified within ISIC/NACE class 479 (Retail sale via mail order houses or via internet).

Some national accountants have proposed that trade margins in internet sales should be treated differently from trade margins in physical shops. It is certainly important to distinguish between commission-type and trade margin-types of business. Dealers such Amazon may use both types at the same time (whether selling from their own stock or facilitating third party vendors). This is under discussion by the (ongoing) Eurostat task force on price and volume measures in national accounts and there is an emerging view that shifts from physical shops to internet purchases, according to the criterion of the predominant activity, should be treated as a volume effect. However this is an area which should certainly be discussed further and in more depth.

## **2 – APPEARANCE OF NEW BUSINESS MODELS**

Use of internet improves efficiency by reducing costs (communication, travel and search costs), by introducing more competition and choice, and by allowing a better organisation of production processes through the automation of inventory and supply management.

New business models are developing, in which firms reorganise their production network, their supply chain, and their management. The operating costs to process an order are reduced, and it becomes easier to find suppliers and buyers at national and international levels, and to compare prices proposed by national and foreign producers.

It is not the intention of this document to enter into a very detailed discussion of "globalisation" issues (the subject of another AEG agenda point), but it is important to note that the internet represents both a challenge (more complex business models cross-border) and an opportunity (availability of information).

The internet clearly generates an incentive for consumers to substitute internet firms for traditional outlets, and this increases international trade. Also, by saving costs, the internet enhances globalisation as small cross-border transactions become more relevant from an economic point of view.

This is a challenge for national accounts, as free and small-scale services may not be observed by statistical reporting systems. And if the production and export side of internet services could relatively correctly be captured by surveying a population of specialised companies engaged in these activities, the consumption and imports of these services are harder to know, because any resident household may be involved. The underestimation of household consumption of internet services has therefore two components: these transactions are difficult to capture; and when captured, the price of the service is low (even free) due to on-line advertising.

On-line advertising is a form of promotion that uses internet for delivering marketing messages to attract customers. It is growing rapidly, but is quite concentrated: in 2012, it was estimated that Google controlled about 70% of on-line advertising. Most services are completely free of charge for users on web sites like Google or Yahoo, which make their profit by selling ad space and time (videos) to brands, the costs charged to the brands being calculated based on number of views (CPM). These large sites are decentralised over the economic territories of the countries of their main users, for example Google has offices in more than 40 countries and Yahoo in more than 25 countries. Fiscal optimisation complicates the picture of their activities, as for instance a large part of advertising receipts of Google France are payable by French advertisers to Google in Ireland.

### **3 - PROPOSALS FOR ALTERNATIVE TREATMENTS OF MEDIA SERVICES IN NATIONAL ACCOUNTS**

#### ***3.1. Media as an intermediate input of the advertising industry : towards an extended measure of production, income and consumption***

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Most media (newspapers, periodicals, radio, television, and internet) are mainly financed by advertising, and media are considered in national accounts as an intermediate input to the advertising industry.

The consumer utility in reading, listening or watching media is not reflected in household final consumption expenditure, which only records - if at all - the part purchased by households, in the form of subscriptions or other types of payments.

It can therefore be debated if, where and how this utility could be reflected in the national accounts. For example, should there be extended measures of production, income and consumption in national accounts (core or satellite accounts), in order to show within households final consumption the real utility of media services?

The current methodology in the SNA 2008 assumes that advertising expenses are embedded in the market price of goods and services, as they help companies to sell their products, and hence are indirectly included in the final expenditure measure of GDP, but not as consumption of media services. In the national accounts, media are mostly regarded as sellers of time and space for advertisers, rather than providing information, cultural and entertainment services to households.

### *3.2 How to value the additional output, income and consumption ?*

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Considering the classification of economic activities (ISIC Rev 4/NACE Rev2 in Europe), the relevant codes for media activities partly (or wholly) financed by advertising are:

- 5813 Publishing of newspapers, journals and periodicals (in print or electronic form, including on the net) ;
- 5819 Other publishing activities ;
- 5820 Software publishing (computer games) ;
- 60 Programming and broadcasting activities (radio and television) ;
- 631 Data processing, hosting and related activities ; web portals.

Despite the media activities bring directed towards the public, their output is mainly covered by the sale of advertising services, treated as intermediate consumption of the advertising industry, and therefore the place of media activities in household final consumption, and in GDP, is arguably under-represented.

In order to roughly estimate this under-representation, it is worth considering the **net receipts** of advertising for media, that is the amounts which - after margins - allow media to finance the information, cultural and entertainment services that they provide to households. These net receipts correspond to the sale of advertising time and space by media to advertisers, minus the costs (including a margin) for the media companies of staff in charge of reaching out to advertisers and discussing with them the form that the ads will take.

ISIC Rev4/NACE Rev 2 Code 731 “Advertising” covers the creation and realisation of advertising campaigns and placing advertising in newspapers, periodicals, radio and television, the internet and other media. As most of these advertising activities are directed towards the public (only a small part, for example in scientific journals, targets business), the advertising output can be used to roughly value extended measures of production, income and consumption in national accounts. From the advertising output should be deducted an estimate of the costs (including a margin) for media companies of managing advertisements in their media.

This is just an estimation of course, as some companies pay directly for advertising to the media without the help of an advertising agency. In addition, the output of resident advertisers is valid for newspapers, radio and television, as these media are mostly produced at national level, and are financed by advertising organised at national level. For internet services, and for on-line advertising, the situation is different as exports/imports may play a major role, so data has to be collected after an identification of large operators that supply these services to resident households.

Another method to estimate consumers' utility, and therefore better reflect the place of media in households final consumption expenditure, would be to start from time-use surveys (time spent on-line, or watching TV, listening radio, reading newspapers, etc...), but this would entail difficult conceptual and measurement issues. This is why it seems more relevant to consider an accounting approach as discussed in this paper.

### *3.3 Three alternative proposals for recording in household final consumption the real utility provided to consumers by media services*

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Three alternatives are proposed, at least in a first step, in the context of satellite accounts, which would provide an extended measure of production, income and expenditure reflecting the real value added of media in the society. Nevertheless the AEG may wish to discuss which aspects could touch upon the core accounts.

In these proposals, we start from the following simple example :

A periodical gets income (103) from:

- Subscriptions by readers (households) (20) ;
- Sale of advertising space to advertising companies (83).

In national accounts, GDP is impacted by 20:

- Production approach : output of the periodical (103) minus intermediate consumption of advertisers (- 83) equal (20) ;
- Expenditure approach : final consumption expenditure by households (subscriptions) (20) ;
- Income approach : sum of uses in the generation of income for the periodical (103) and for advertisers (-83) equal 20.

The three alternative treatments presented below consider the ways to estimate the additional production, income and expenditure to be recorded in order to better reflect the real place of media in GDP.

The underlying approach is to calculate this change on the basis of the two distinct activities exercised by the periodical : the periodical produces media services in the form of information, entertainment and cultural services ; the periodical is also a seller of space for advertising.

Suppose the sum of costs for the periodical is 100 and these costs can be split according to these two activities :

- 85 represents costs linked to information, cultural and entertainment media services, principally wages and salaries of journalists, costs of travel, paper, printing, etc...
- 15 represents costs linked to the sale of advertising space, mainly wages and salaries of staff in charge of contacting advertisers, and discussing with them the form the ads will take.

	Information, cultural and entertainment media services	Sale of advertising space	TOTAL
Output	20	83	103
Costs	85	15	100

The additional household final consumption corresponds to the net receipts of the sale of advertising space by the periodical, that is the output of this activity (83) minus its costs including a margin (15 + 3) equal 65.

This amount of 65 also corresponds to the imbalance observed in the media activity, where output (20) is much lower than costs (85). This identity is normal, because what we want to measure here are the amounts which allow media to finance the information, cultural and entertainment services that they provide at reduced prices to households.

***SOLUTION 1 : Impute an additional output for information, cultural and entertainment media services, consumed by the public as household final consumption :***

This solution re-equilibrates the accounts of media services, by reflecting their actual value in output.

	Information, cultural and entertainment media Services	Sale of advertising space	TOTAL
Output	20 + 65 imputed = 85	83	103+ 65 imputed = 168
Costs	85	15	100

Then a current transfer (D.75) is recorded for an amount of 65 from the periodical sector (S.11 sector) to households (S.14 sector), reflecting the fact that the imputed output of the periodical only considers the consumer utility of reading it.

The impact on GDP of the imputation would be the following :

- Production approach : GDP increases by the additional imputed output of the periodical (65) ;
- Expenditure approach : GDP increases by the additional household final consumption (65) ;
- Income approach : GDP increases by the additional operating surplus of the periodical (65).

This method adjusts the household final consumption expenditure in media services; its weakness - putting aside measurement issues - is that it implies an artificial increase of the operating surplus of the S.11 sector - even if non-financial corporations sector (S.11) disposable income and saving remain unchanged.

***SOLUTION 2 : A final consumption for corporations (advertisers), using an analogy between cheap media financed by advertising and social transfers in kind***

This solution is still based on the identification of output and costs of two products: information, cultural and entertainment media services; and the sale of advertising space.

When the periodical sells space to advertisers, it takes into account its costs for producing information, cultural and entertainment services after deducting subscriptions received by households (in the example,  $85 - 20 = 65$ ). Therefore, when advertisers pay 83, we can consider that 65 relates to the purchase of media services and only  $83 - 65 = 18$  relates to the coverage of “pure” costs of advertising.



The proposal is to split the payment of 83 made by advertisers between their intermediate consumption (18) and their final consumption (65).

Solution 2 is based on the observation that the delivery to households of media services much below their costs (households pay 20 for a service that costs 85) has similarities with social transfers in kind (D.63). Social transfers in kind are individual goods and services provided free or at prices which are not economically significant to individual households by government units and NPISHs.

There is of course a major difference with social transfers in kind as only non-market units deliver them. We have however to note that 2008 SNA Research Agenda includes the final consumption of corporations among research issues (2008 SNA Annex 4 Item B.4); we could consider that advertisers finance media in exchange of the tacit agreement of households to read, listen or watch advertisements.

In the present SNA, no final consumption is recorded for corporations because corporations are not considered as the final users of goods and services. If this rule was changed, the part of costs of media which is not financed by households, in our example (65), could be considered as a form of individual consumption and treated as final consumption expenditure of corporations (advertisers), which then via the periodical provide transfers in kind to households, those transfers being subsequently recorded in household actual final consumption expenditure.

In this approach, advertisers are treated as general government and NPISHs, the final consumption expenditure of which includes the value of services that they provide free of charge or at reduced prices to the population.

The impact on GDP of the imputation would be the following :

- Production approach : GDP increases by the decrease of the intermediate consumption of advertisers (65) ;
- Expenditure approach : GDP increases by the actual final consumption of households (and no more by their final consumption expenditure as in solution 1 (65) ;
- Income approach : GDP increases by the additional operating surplus of the advertisers (65).

As for solution 1, the weakness of solution 2 is that it implies an increase of the operating surplus of the S.11 sector – but saving is unchanged. In addition, final consumption of corporations is not yet identified in 2008 SNA; if this becomes the case, this method would be attractive.

### ***SOLUTION 3 : A new imputed household service***

This solution introduces an imputed new category of services produced by households "reading, listening and watching advertisings" and is arguable the most "radical" of the solutions.

It is based on the assumption of an implicit contract between households and advertisers: households benefit from free or cheap information, cultural and entertainment services produced by media, and as a counterpart accept reading, listening and watching advertising. Households therefore produce a service for the advertisers by agreeing to be exposed to advertisements in exchange of free or cheap services provided by the media and financed by the advertisers.

In the above numerical example, we would have the following recordings:

- The costs met by the periodical by producing information, cultural and entertainment services amount to 85, and households already pay 20 via subscriptions.
- An additional imputed purchase of 65 by households is recorded in order to cover all the costs of information, cultural and entertainment services.
- The counterpart of this purchase is the imputed service (65) of reading advertising which is produced by households and purchased by advertisers.

Households		Advertisers		Media (periodical)	
Subscriptions to the periodical 20	Imputed output "sold" to advertisers by agreeing to be exposed to advertisements 65	Purchase of time and space to the periodical $83 - 65 = 18$		Sale of space to advertisers $83 - 65 = 18$	
Imputed purchase of entertainment services to the periodical 65		Imputed purchase of the households imputed output 65		Sale of entertainment services to households $20 + 65 = 85$	

Output and costs for the periodical:

	Information, cultural and entertainment media services	Sale of advertising space	TOTAL
Output	$20 + 65 \text{ imputed} = 85$	$83 - 65 \text{ imputed} = 18$	103
Costs	85	15	100

The impact on GDP of the imputation would be the following :

- Production approach : GDP increases by the amount of a new service produced by households (65) ;
- Expenditure approach : GDP increases by the additional amount of the final consumption expenditure by households (65) ;
- Income approach : GDP increases by the additional amount of mixed income of households' sector (65).

Advantages of the method:

- There is no impact on S.11 sector, as operating surplus of advertisers and media companies are unchanged.
- At the level of the two activities of the media, there is a re-equilibrium as the output of entertainment services and of sale of space to advertisers become closer to their respective costs.

Disadvantage of the method:

- The solution is based on the creation of an imputed new service produced by households "reading, listening and watching advertisements" in exchange for which advertisers finance a major part of the costs of producing media. Even if imputed

households dwelling services already exist in the core SNA accounts, the new service proposed here may be considered as opening the way for too many further imputations in the system.