

Computer services

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What are computer services?

- In Balance of payments services:

Computer services are part of the main category:

SI - Telecommunications, **computer** and information services

SI1 Telecommunications

SI2 Computer services

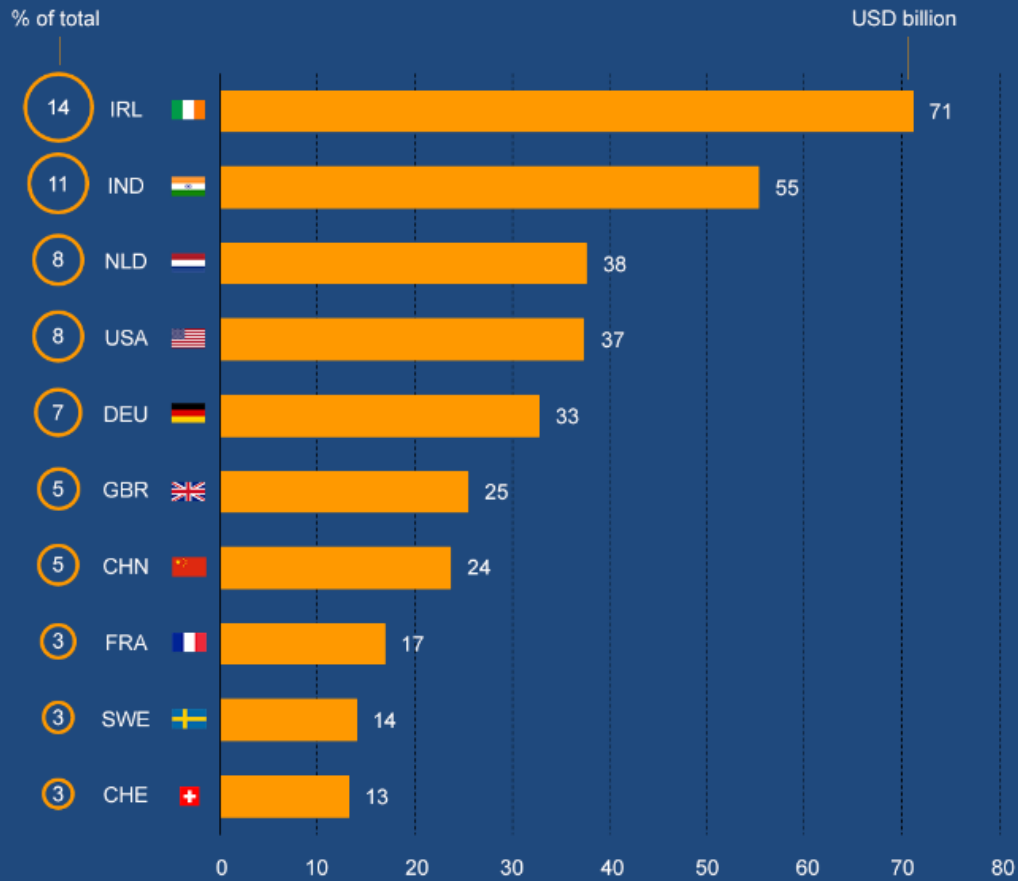
SI3 Information services

ICT is a growing part of the economy and of trade in services

- ICT services grew from 8% of total services trade in 2008 to 10% in 2016. (source UNCTAD and OECD)
- Therefore it is increasingly important measure it appropriately.



Top 10 world exporters of ICT services USD billion and percentage shares (2016)



Source: OECD Digital Economy Outlook 2017, Fig. 3.18.
StatLink: <http://dx.doi.org/10.1787/888933585020>.



BPM6 Classification of Computer services

SI2 Computer Services

SI21 **Computer software**

SI21Z **of which: Software originals**

SI22 **Computer services other than computer software**

What is included in SI21 - Computer software in BPM6?

- *Computer software* consists of hardware- and software-related services and data-processing
- Including the production of software:
 - Operating systems
 - General business productivity software
 - E.g. accounting, office suites, management
 - Computer games
 - Other applications
 - E.g. media players, educational
- Whether customized or mass-produced
- Sales of software included under certain conditions

SI22 - Computer services other than computer software?

- Hardware and software consultancy and implementation (including subcontracting, training, or other related services)
- Hardware and software installation
- Maintenance & repair: computers, peripherals
- Analysis, design, and programming
- Data processing services
- Web page hosting
- Providing or hosting client's applications

Treatment of software trade in relation to intellectual property products

	Licence to (final) use of intellectual property i.e. excl. reproduction - distribution	Licence to reproduce and/or distribute intellectual property	Sale / purchase of ownership rights
Computer software, audiovisual, etc. (a) Customized all types (b) Mass-produced— downloaded or otherwise electronically delivered (c) Mass-produced— on physical media with periodic licence fee (d) Mass-produced— on physical media with perpetual use	 relevant service item Goods	 charges for the use of intellectual property n.i.e.	 relevant service item
Outcomes of research and development	charges for the use of intellectual property n.i.e		R&D services

Practical matters

- Compilation issues
- Example Questionnaire
- References

Before seeking to measure trade in computer services

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- Data collection strategy
 - Consider the international ICT situation of the country
 - Look at the bigger picture of telecommunications, computer services, intellectual property, audio-visual and information services in the country
 - What are the important resident ICT-related activities in terms of money and employment?
 - Who are the exporters, importers of ICT and in particular telecoms and computer services?
- What are the potential data sources:
 - ITRS, Business registers, Activity data in innovation parks, Merchandise trade statistics, Customs records, General trade in services surveys, Surveys of computer services, software, or ICT companies, Commercial payment data (e.g. payment cards used for purchase of software, apps and telecoms services - can international payments be identified?), National ICT activity data, Household expenditure data
- Are surveys possible and for which parts of ICT activity?

Potential data sources?

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Example questionnaires

- As nearly all companies buy computer services and software and many head offices of companies may provide central computer services to subsidiary companies and charge for the service –
- Computer services questions are often included in a general services survey to a wide range of companies not just in the ICT sector.
- Example questionnaires can be found:
- UK Office for National Statistics International trade in services questionnaire:
- Google: ‘[ONS Survey of International Trade in Services](#)’
- US Bureau of Economic Analysis international services questionnaire
- https://www.bea.gov/surveys/respondent_be125.htm

Computer services and bespoke software providers

- May be entirely resident in UAE
- May have a resident company with a head office abroad
 - Front end services are delivered by the resident company and software may be written abroad in India or Germany leading to trade between the resident company and another sister or parent company abroad.
- Service or software may be entirely delivered from abroad

Households are consumers of computer services

- It is important to note that households are major consumers of telecommunications and computer services including computer software and telephone apps.
- Would need to know how much is household expenditure goes on such services and what proportion is paid to a supplier abroad?
- Can one put questions on national household expenditure surveys?

References

- MSITS 2010 in Arabic, English and French (UN et al)
- MSITS 2010 Compilers Guide (UN et al) in English
- BPM6 Manual in Arabic, English and French (IMF)
- BPM6 Compilation Guide (IMF) in Arabic, English and French
- OECD Digital Economy Outlook 2017 (OECD) in English and French

Finally....

- Thank you for your attention
- Do you have any questions?