

Staff working paper

The Digital Economy as an Accelerator of Regional Integration in Asia-Pacific

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Abstract

This paper seeks to determine the effects of the digital economy in the regional integration process underway in the Asia-Pacific region. Based on international trade and information and communications technology (ICT) statistics, the digital economy is accelerating the process of regional integration in a number of ways. First, the digital economy, by fostering intra-regional growth in trade and employment, is inducing shifts in the regional development paradigm. Second, ICT in the region has emerged as a source of dynamism and innovation that has enabled virtually every other sector to increase productivity, which has changed the way businesses integrate production processes across borders. Nevertheless, serious challenges remain, and these need to be addressed before a truly borderless connectivity is achievable region-wide. This paper suggests policy recommendations to address these challenges; these include the need for an enabling policy environment that allows for the movement of enterprises up the value chain by raising technological skills and promoting labour mobility. The paper underlines the need for a region-wide ICT infrastructure expansion and puts forward proposals for strengthening intergovernmental cooperation.

Keywords: connectivity, regional integration, ICT for development, digital divide, ICT infrastructure, trade in ICT goods.

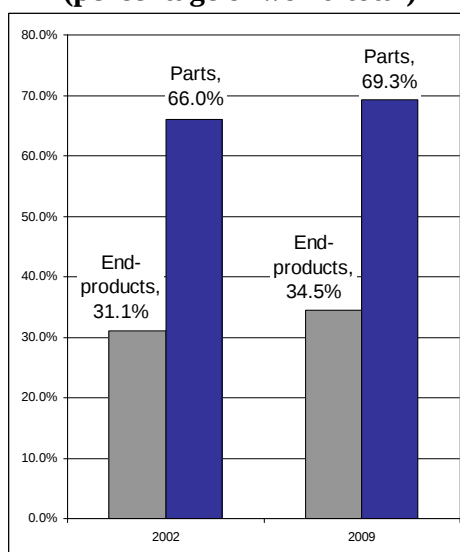
The Digital Economy as an Accelerator of Regional Integration in Asia-Pacific

The digital economy is an accelerator of the regional integration process already underway. This is taking place in two ways:

First, because the digital economy is expanding significantly, it is contributing to shifts in the regional development paradigm, with growth increasingly sourced from within the region.

An increasing percentage of the region's employment and trade is in the information and communications technology (ICT) sector. Over the period 2002-2009, intra-regional trade in ICT goods increased at an annual average of 20.8 % as compared to 15.7% and 8.39% for the region's ICT goods destined for the European Union (EU) and United States (US) markets respectively. The share of ICT parts and components destined for assembly within the region itself increased from 66% in 2002 to 69.3% in 2009, and even more importantly, the region's consumption of end-products more than doubled from US\$ 63.9 Billion (or 31.1%) to US\$ 148.2 Billion (or 34.5%) as shown in Figure 1.

**Figure 1: Share of intraregional trade of ICT goods in Asia-Pacific, 2002 and 2009
(percentage of world total)**



Source: ESCAP. Based on UN Comtrade data of reported imports by Asia-Pacific economies of ICT goods originating from Asia-Pacific economies. ICT goods are defined in the “Guide to Measuring the Information Society”, annex 1A (2009 OECD).

Second, ICT in the region has emerged as a source of dynamism and innovation that has enabled greater productivity in virtually every other sector and changed the way business is

done. High-speed communication networks today are having a transformative economic impact similar to that of the development of transport networks and investment flows a few decades ago. Through improved internet interoperability, demand for new services and content is growing, which in turn is fuelling further connectivity and integration among economies and people across the region. Furthermore, the fact that mobile phones are rapidly moving towards ubiquity in the region - from 6 to 61 mobile phone subscriptions per 100 inhabitants on average, in less than a decade (ESCAP, 2011) – there has been a radical improvement in the connectivity of economies and empowering hitherto marginalized people. Small and medium enterprises (SMEs) now benefit from improved access to affordable information systems, that enable them to obtain information in a timely manner, and communicate and better manage their operations (e-mail, calendars, document management, accounting, among others); this is at considerably lower costs to those of large enterprises.

However, although a digital way of life is emerging for many people across the Asia-Pacific region, serious challenges remain. Deep digital divides between and within countries in the region persist which prevent digital technologies from reaching their true transformational potential in connecting economies and empowering peoples. These challenges need to be addressed before a truly borderless connectivity is achieved region-wide.

We examine these developments in more detail below and conclude with a set of policy recommendations.

Methodology

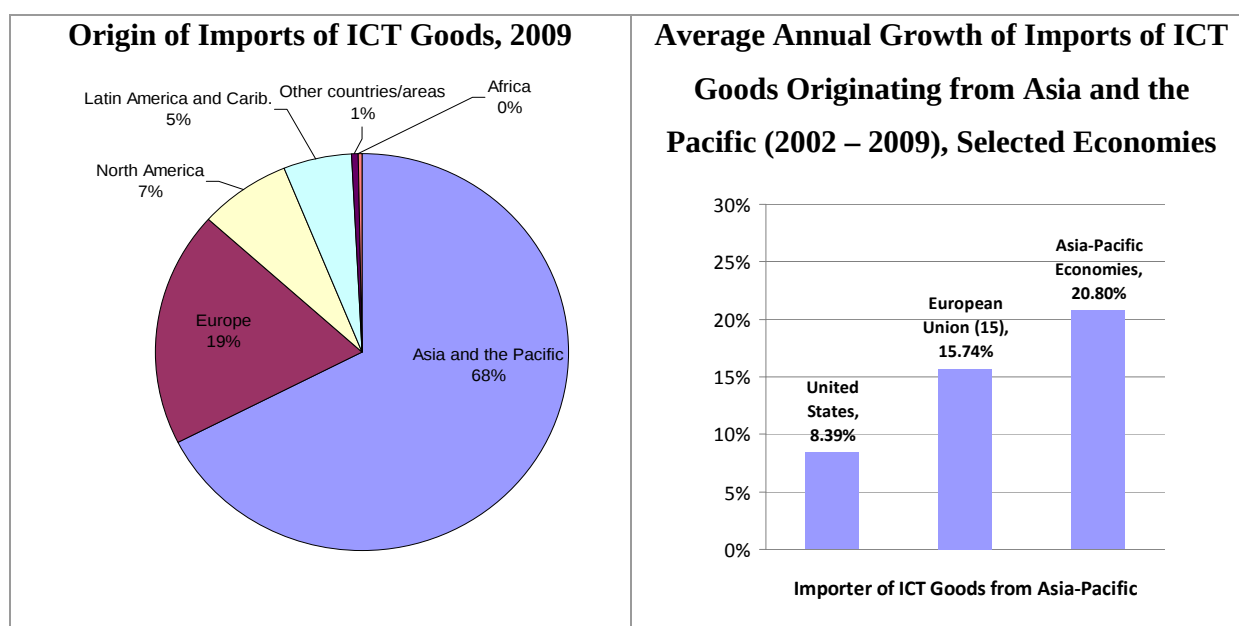
This research study seeks to determine the effects of the digital economy in the regional integration process underway in the Asia-Pacific region. The study is based on a literature review (see references section) and on statistical analysis of international trade data of ICT goods obtained from the United Nations Commodity Trade Statistics Database (UN Comtrade). Annex A provides details of the trade data used, which follows the methodology of the United Nations Partnership on Measuring ICT for Development and the definition of “ICT goods” as contained in the “Guide to Measuring the Information Society” published by the OECD. (OECD, 2009). Annex A also describes discrepancies in data between the value of ICT goods reported by exporting countries, and their mirror data namely the value of ICT goods reported by the destination or importing country.

Findings

I. The ICT supply chain is a key driver of the market-driven regional integration process

The world imports more ICT goods from Asia-Pacific than from any other region in the world. These imports have grown rapidly around the world, but since 2002, the fastest demand has been seen in the intraregional market, which has seen a particularly rapid growth of over 20 % average annually (see Figure 2).

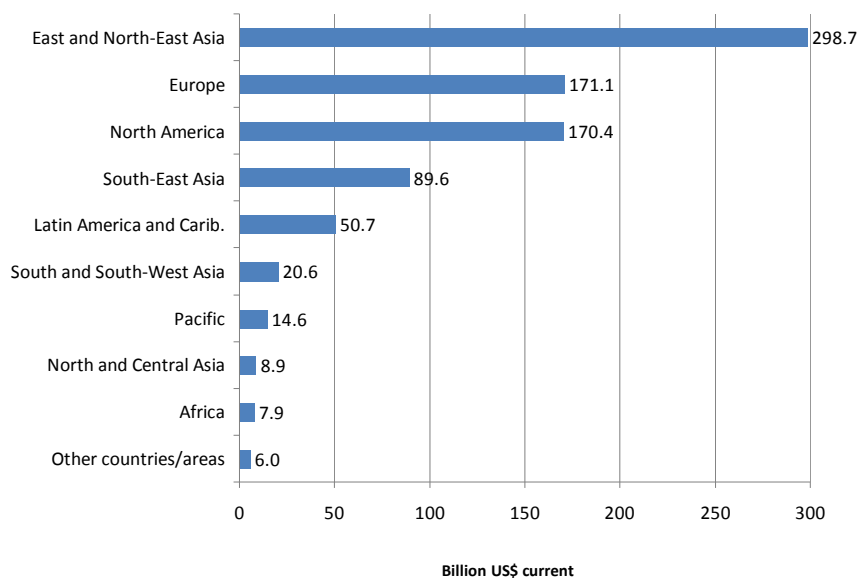
Figure 2: Where the World buys ICT Goods?



Source: ESCAP. Based on UN Comtrade data of reported imports. ICT goods are defined in the “Guide to Measuring the Information Society”, annex 1A (2009 OECD).

Reflecting the integrated production system in ICT manufacturing, trade in ICT goods is dominated by intra-regional flows. For instance, in 2009, Asia-Pacific importers sourced more than twice the value of ICT parts from within the region (US\$ 286 Billion, 69.3%) as compared to what they sourced from the rest of the world (US\$ 126.9 Billion, 30.7 %). The top three subregions in Asia-Pacific to import these ICT goods (which had been produced within the region) were, in 2009, East and North-East Asia and South-East Asia, which together accounted for US\$ 388.3 billion, or 46.3%, of the region’s total exports (see Figure 3).

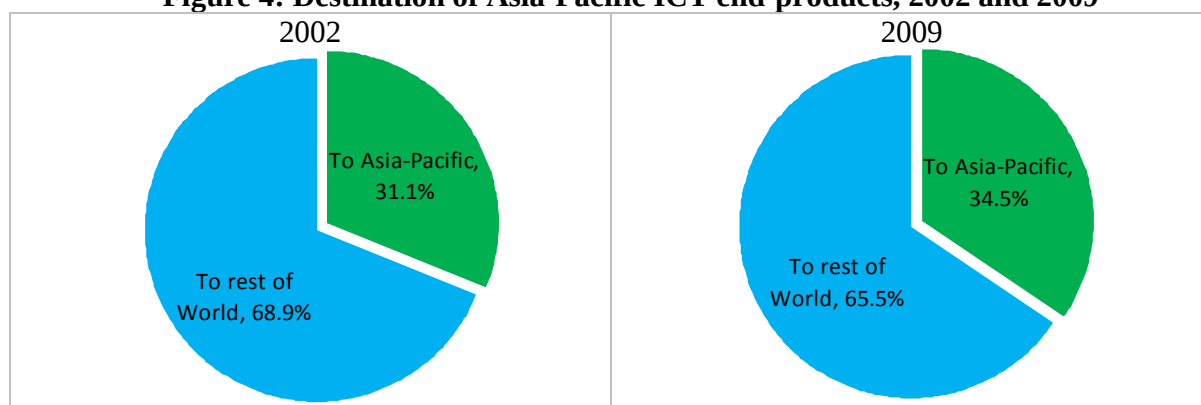
Figure 3: Top Regions Importing ICT Goods Originating from Asia and the Pacific, 2009



Source: ESCAP. Based on UN Comtrade data of the value of reported imports in ICT goods. ICT goods are defined in the “Guide To Measuring The Information Society”, Annex 1A (2009 OECD).

The demand for ICT end-products (not parts) originating from Asia-Pacific is still mainly from outside the region (65.5 %), but as mentioned above, the intraregional demand for end-products is increasing (see Figure 4).

Figure 4: Destination of Asia-Pacific ICT end-products, 2002 and 2009



Source: ESCAP. Based on UN Comtrade data of reported imports. The definition of end-products is detailed in Annex A. ICT goods are defined in the “Guide to Measuring the Information Society”, annex 1A (2009 OECD).

The thriving growth of the ICT sector in Asia-Pacific has been accompanied by a rise in world class Asian manufacturers, operators and service providers. Using innovative business models such as targeting low-income but large-volume consumer bases, enterprises in the region have capitalized on this growing consumer base, leading to a vibrant digital regional market. The ICT sector is particularly important as a source of export revenue for some economies in the region, as can be seen in Table 1.

Table 1: Exports of ICT Goods as a Share of Total Exports. Selected Economies, 2009 (Percentage)	
Hong Kong, China	43.1
Malaysia	36.5
Philippines	36.4
Singapore	33.9
Taiwan, Province of China	33.0
China	29.7
Republic of Korea	21.9
Thailand	19.8
Japan	12.1
India	3.5
<i>Source: ESCAP, based on data from UNCTAD available at UNCTADstat, Share of ICT goods in international trade, annual, 2009.</i>	

A virtuous circle has set in, whereby increased employment creation combined with more affordable and more diffused ICT equipment and services has stimulated greater demand for digital products and services. For example, in China's telecommunication sector, employment grew annually at an average of 3.7% from 2002 to 2008, while total employment growth on average has consistently stayed below 1.2% annually since the mid nineties.¹ Within the same context, in 2011, China became the largest market of smartphones, surpassing the United States.²

A recent study measured the impact of the Internet on the Gross Domestic Product (GDP) of selected economies, in 2009 (McKinsey, 2011). The study considered expenditures and consumption, by public and private entities, in activities related to the Internet (e.g. e-commerce, online advertising), telecommunications (e.g. internet service providers), software development and ICT consulting, as well as hardware manufacturing and maintenance of equipment used for the Internet. In the region's four largest economies, internet consumption and expenditures were

¹ ESCAP. Full-time telecommunication employees in China obtained from the ITU World Telecommunications/ICT Indicators database 2011. Employment % change per annum in China obtained from ESCAP Statistical Yearbook 2011, p. 220.

² Reuters. China overtakes U.S. in smartphone sales-analyst, accessed on 25 – Nov – 2011 website: <http://www.reuters.com/article/2011/11/23/china-usa-smartphones-idUSN1E7AL1KX20111123>

found to contribute 4% of the GDP of Japan, 2.6% in China, 3.2% in India, and 4.6% in the Republic of Korea. The growth in the internet economy was found to be largely market oriented, driven either by private domestic consumption, or by exports. For example in the Republic of Korea and Japan private consumption is responsible for 69% and 47% respectively of the above mentioned consumption shares of GDP. For India and China this figure was 47% and 39%, respectively, which can be explained by net foreign trade in Internet-related activities.

II. Gaps and Opportunities for Regional Integration

Technological innovations in recent years have lead to a second IT revolution, not seen since the early 1990s. In Asia-Pacific, as in other regions of the world, mobile telephony and broadband internet in particular are bringing unprecedented digital opportunities that are creating new spaces for, and an acceleration of, regional integration. At the same time, a number of gaps, particularly in infrastructure, need to be addressed, if the potential offered by digital opportunities is not to be turned into a digital divide that accelerates regional inequities to the detriment of greater regional integration. In this section we review the digital divides and other gaps, assess them against new opportunities and propose regional policy actions.

While the region benefits from having the most advanced country in the world in terms of ICT infrastructure and human capacity - the Republic of Korea (according to the ICT Development Index (IDI) in 2011), closely followed by Hong Kong (China), Japan and Singapore - it also has countries such as Papua New Guinea which rank among the lowest (ITU 2011: 29).

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