

Concept Paper
CODI IV

Information as an Economic Resource

1. Rationalizing the theme

The selection of the CODI IV theme on '*Information as an Economic Resource*', signals the need for communication specialists and economists to begin re-thinking the role of information in economic development, and potential for growth. The contribution of information to the overall economic performance is related to the amount of resources devoted to ICT, human resource development, creation of enabling environment, among other factors. The use of more information in the decision process makes it possible to make better estimates and reduce input of other resources in the production process. These trends make this theme a timely and pertinent topic that needs further attention in Africa.

Information is now a critical factor of production for goods and services, just as natural resources, labour, capital, and entrepreneurship. This is further bolstered by the impact of rapid globalization and the emerging new global economic order dominated by information and knowledge products as raw materials that has come to characterize the world economy.

The increasing pervasiveness of information in the economic realm, be it in the form of statistics/data, ICT/GIS applications has led to what many now term the '*information-based economy*' or simply, the *information or digital economy*. In specific terms, the information revolution has been a major driver of economic change, restructuring businesses, affecting skills and employment, contributing to growth, and facilitating the opening up markets through the wider and faster flow of information and knowledge. The current nature of the global information economy is based on forms of intangibles, information, innovation and creativity for expanding economic potentials. The essential elements include:

- Digitalization and intensive use of information
- Codification of knowledge
- Transformation of information into commodities
- New ways of organizing work and production

For instance, ICTs play an important role in economic expansion through their impact on productivity growth via three main channels namely production, investment and usage/diffusion. Computer-integrated manufacturing, for example, enables automated model changes on the production line as well as fully integrated design and manufacture.

2. Information as an economic resource –the imperfection challenge

Consequently, an information-based economy is based upon the premise that information has economic value and requires an information marketplace in which such value can be exchanged. Information reduces uncertainty thereby leading to better decisions and optimal choices, which results in increased level of utility, efficiency and productivity. It permits individuals to increase the expressed utility of their decisions to improve the use of other resources, increase the effectiveness of capital, labor and productivity.

Yet, this economic reality runs counter to the popular notion that information is free, which causes a great deal of confusion. This is due to information's special properties (public good concept) that imperfect and asymmetric information can lead to significant inefficiencies. At the same time economic costs are associated with discovering, gathering, processing, manipulating, archiving and even using information. Time is spent on the resources needed to gather, process and distribute information. Most expensive of all is the human resources in the form of professionals skilled in producing computer software, designing search algorithms, databases and developing more user-friendly tools and applications that interface with the world's cornucopia of knowledge, creating information markets.

In creating information markets, a genuine marketplace of information products cannot be sustained without the existence of fairly sophisticated and legal systems that guarantee proprietary rights (Intellectual Property) to the producers and processors of information products and the providers of information services. These developments have heightened the importance of information in the economy, and more especially since Joseph Stiglitz's theories of information imperfection, or asymmetries of information, which is inherent in market as well as created by the market¹, gained greater recognition.

Information has technical properties of non-rivalry and non-excludability but the market mechanism may often operate imperfectly in allocating resources to information provision and acquisition, originating from lack of access to information, which is considered as the main cause of the digital divide. He further espoused that the most challenging problems for growth lies in economic development in developing countries, as market failures are more prevalent, and was the basis of this research. Finally, Stiglitz postulates that one of the most

¹ "Information and the Change in the Paradigm in Economics", Joseph Stiglitz, 2001

important determinants of the pace of growth for developing countries the need to close the knowledge gap between themselves and industrial countries and build capacity to appropriate research (R&D) results.

3. The e-commerce dimension

Current revolutionary transformations in business processes are embodied in the advent of e-commerce. Over the past five years, the dynamic growth of the Internet, e-commerce and e-business has continued, with the total worldwide e-business market reaching \$1.7 trillion in 2004. The process of economy-wide innovation, driven by supply chain transformation and online marketplaces, has widened and intensified in every major economy. The value of e-commerce transactions, accordingly, has been multiplied in the past years. The figure in the Asia and the Pacific region alone was expected to increase from \$76.8 billion in 2001 to \$338.5 billion in 2004². The global Business-to-Business (B2B) transaction was estimated to increase from \$226.2 billion in 2000 to \$3,774.8 billion in 2004³.

The economic value of libraries, geoinformation and statistics create market potentials and opportunities, especially in the area of transport, energy and construction. Specifically, geoinformation, or geo-data, could be a service which generates income to governments and provide employment opportunities, while the statistical data and information assist individuals, businesses and government in making informed decisions based on analyzed and accurate information. At the same time, digital and virtual resources constitute information goods and services and are now new industries or sectors and constitutes part and parcel of global legal frameworks.

At the international level, the centrality of information is recognized by the World Trade Organization (WTO) through the General Agreement on Trade in Services (GATS) where rules are extended to services which includes anything from insurance, telecommunication, banking, transport, tourism to basic social services such as health care, education, water and sanitation. In particular the WTO recognized telecommunications and Information Technology as important sectors of economic activity, as well as an important channel of information transfer for other key economic activities. This effectively allowed foreign operators to supply new connections and break domestic monopolies.

² "eMarketer" 2001

³ "eMarketer" 2001

GATS aims at achieving progressively higher levels of liberalization of trade in services, achieved through the removal of all restrictions and government regulations that are considered to be trade barriers. This is mainly due to the fact that services are a lucrative market for transnational corporations and the service industry covers over half of the global economy, and trade in services constitutes around 25% of world trade, which is why corporations form one of the biggest lobbyists for GATS. The agreement also covers foreign companies who set up branches to provide services in another country, meaning once established in a host country foreign service providers, be they Internet Service Providers (ISPs), private telecom operators, software companies (such as Microsoft) must be treated no less favorably than domestic firms effectively removing the power of governments to protect local infant industries from competition from foreign companies or require that investors employ local staff or use local raw materials.

GATS apply to trade in e-commerce as they do to all forms of trade, which guarantee the right to do international business electronically. From an international trade perspective e-commerce is an important channel for retailing and wholesaling of goods and services covered by the GATS. Also, e-commerce is the delivery of services direct to the consumer in the form of digitized information, and GATS covers the delivery of services by whatever means, including electronic forms.

However, the WTO's Information Technology and Basic Telecoms agreements, both signed in 1997, help promote e-commerce by eliminating duties on computer hardware and liberalization of the telecoms services on which the Internet depends. Further telecoms liberalization have been under negotiation in the services negotiations that are now under way that could lead to a second Information Technology agreement that extends the range of hardware and is traded duty-free.

Consequently, introduction of e-commerce presents some challenges that have to be addressed by African countries both at the domestic and international levels.

4. Rising up to the challenge

Undoubtedly, more work needs to be done in championing the cause of information for development and, capacities strengthened in Africa if information can be used as an economic resource. Some of the challenges that remain include the lack of awareness of the potential of information in all decision-making strata of governments, particularly the topmost layers, and worse still the low economic attribution given to information. In many cases, information for development

issues are still not integrated into other areas of government, in particular with Ministries of Finance and those responsible for development priority.

In addressing whether information can become an economic resource in African countries, the following questions need to be answered:

- Do African countries have the resources and capacity to place information-led growth at the heart of their national development strategies?
- Can countries create the necessary and significant competitive advantages in information production or services in the area of Geoinformation, ICT and Statistics?
- Are information industries in Africa strong sectors to provide competitive advantage in international trade?
- Have countries succeeded in defending their interest at the global arena on e-commerce through GATS?
- Is there political will for mobilizing the required investments for an information-friendly infrastructure and environment, as well as a strong fiscal policy?

To a large extent the groundwork has already been laid through ECA's information for development programmes and the implementation of the African Information Society Initiative (AISII). Current steps being taken by African countries to develop national e-strategies, or NICI plans are a case in point, which show that governments are recognizing the importance of information and the various associated technologies.

Closely linked to e-strategy development is support to African Universities in R&D capacity-building activities aimed at injecting innovation on the Information Society. The universities serve as incubators by public sector intervention for improving the operation of the private sector in ICT innovation, as well as creating new jobs.

With the recognized role played by ECA in supporting member States in the areas of ICTs, Geoinformation and Statistics for the past decade, this is an opportune time to take stock, and appraise this area of work in the context of economic growth for African countries.

As a result, issues to be examined during the CODI meeting as well as the pre-events include the following:

- Developing a framework for more in depth analysis of the role and impact of information as in economic resource in African economies;
- Addressing with African countries as a matter of priority, the information deficiencies and gaps and defining strategies for reducing this gap, including an assessment of current reforms in the information and communication sectors;
- Defining or revising in most cases, the information policy framework to shape the impact of information in economic growth, productivity, employment and business;
- Seek recommendations from the CODI Forum that informs the ECA 2006-7 work programme from the perspective of the various sub-committees.

5. The Keynote Address: Bringing it all together

With the foregoing, this concept paper will be based on and elaborated in the keynote address of the CODI IV meeting. The speech will examine and assess what constitutes an economic resource and how information fits into that mould, providing the different characteristics and features that make information an economic resource.

In the main message, the keynote speaker will focus on three major areas:

- Information in a globalized world and its emergence as a key factor in economic growth, examining the macroeconomic effects of information and the links between growth and development based on current literature. This section will also include the impact of information on growth and trade, as well as international rules governing trade in services that affect the information sector.
- Information for strengthening competitiveness and competitive advantage of countries, focusing on microeconomic dimensions of information as a resource and the notion of comparative advantage. This section will explore issues of economic intelligence and strategies for decision-making, knowledge

management and automation of production and communication processes, the value chain and information infrastructure.

- Enabling environment for an information-led African economies, highlighting issues of infrastructure, the legal and regulatory environment, capacity-building and political will, are some of the challenges to be addressed.

Finally, refocusing and revising strategies that take into account the growing pressures of competition and globalization that calls for renewed commitments of both Africa's private and public sectors to an effective policy agenda on information for development. To succeed in an intensely competitive, global marketplace, the continent must center its economic strategy on the contribution of information to productivity, growth and wealth creation.

The upshot of new markets as a result of information could provide an unparalleled opportunity to member States in Africa employment creation, expansion of businesses and trade and, ultimately building wealth for the socio-economic development of countries. Especially important is the creation of a regional market on the continent. According to an OECD report, e-commerce transactions in Europe take place mainly at the national and regional levels⁴, and not beyond as a result of legal, trust, security and logistic problems faced in international transactions. The harmonization of legislations and legal frameworks in Africa could increase transactions of goods and services facilitated by ICT at the continental level as a major step towards regional integration.

Ultimately, for information to have an impact on economies successful economic strategies are needed to enhance Africa's capacity to adopt and exploit information and its attendant technologies so create certain competitive advantages. This cannot be left to information and communication specialists alone – as the future and shape of an information economy in Africa will require multi-dimensional strategies and a complex mix of economic, legal, technical and cultural considerations that is uniquely African in scope and based on international standards in scale.

⁴ “Measuring the Information Economy 2002”, OECD