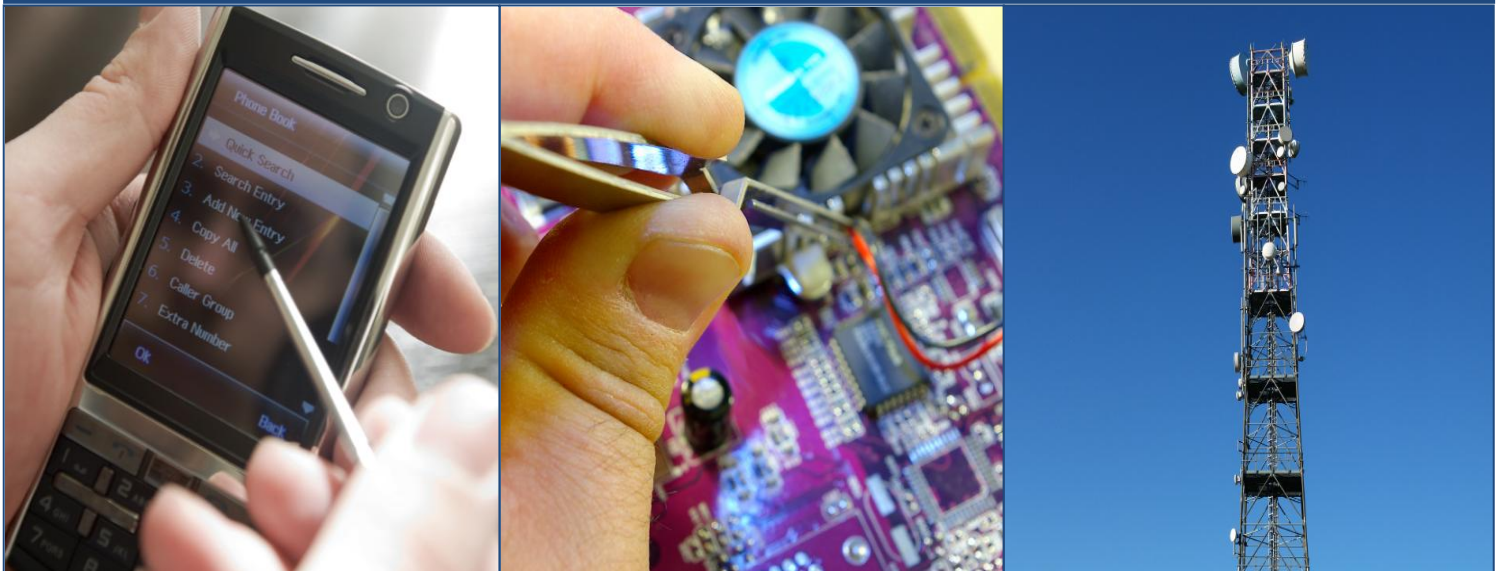




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# When Should the ICT Sector be a Target for Private Sector Competitiveness Work?

**TECHNICAL BRIEF NO.3**



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**Submitted by:**

**J.E. Austin Associates, Inc.  
Weidemann Associates, Inc.**

**Authored by:**

**Judy Payne, EGAT/USAID  
Mike Ducker, J.E. Austin Associates**

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**[www.BusinessGrowthInitiative.org](http://www.BusinessGrowthInitiative.org)**

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# Business Growth Initiative Technical Brief

## When Should the ICT Sector be a Target for Private Sector Competitiveness Work?

### 1. Introduction

As part of their economic growth portfolios, many USAID missions fund projects aimed at increasing the competitiveness of specific “target” sectors. Target sectors are selected using various techniques to sort out those that will have the largest economic impact, usually measured by jobs or revenue. USAID missions and their economic growth projects often select the information and communications technology (ICT) sector as a target sector, sometimes describing the choice as a “no brainer,” given the direct effect of the sector on economic growth as well as its indirect effect on many other sectors.

There are solid economic reasons why the ICT sector might be treated differently than other sectors. Research shows that the use of ICT products and services can have a catalytic effect on economic growth by enhancing productivity and innovation throughout a country’s economy.

It appears that the ICT sector may be selected too frequently as a target competitiveness sector given its potential impact on jobs and revenue relative to other target sectors, because teams assume it will have *direct* impacts on the sector as well as *catalytic* effects on the economy. The types of activities used to support a country’s ICT sector as a target sector for competitiveness are not necessarily the activities that would best increase ICT’s catalytic effect on a country’s non-ICT economic sectors.

In many cases, it might actually be more beneficial for teams to focus on ICT as a catalytic sector instead of as a target sector -- with activities tailored to this purpose. Economic growth project implementers along with USAID economic growth teams could probably do better at sorting out when it makes sense to focus on ICT as a target sector or when and how to promote ICT for its catalytic effects on the economy -- or both.

This technical brief attempts to assist USAID mission staff and project implementers in determining when it is appropriate to utilize either of these two approaches and what project activities should be tailored to each approach. It was developed based on the authors’ skills and experience as well as interviews with 19 current or recently completed economic growth projects (see Appendix A) that focused primarily on the ICT sector as a target sector (although a few also focused on using ICT as a means to improving impact in non-ICT target sectors).

Appendix B poses a set of discussion questions which we hope will stimulate discussion regarding this paper’s topic and help hone our understanding of best practices.

The technical brief attempts to define a set of best practices, but it is a work in progress and thus poses questions not yet answered. What experience would you cite to hone the technical brief’s advice? You are urged to contribute your insights via the BGI website<sup>1</sup> so all of us can

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<sup>1</sup> Go to <https://www.businessgrowthinitiative.org/blog/default.aspx> to join the discussion.

improve how we use ICT to strengthen the competitiveness of businesses in developing countries.

## 2. What is the ICT Sector?

The ICT sector is heterogeneous, perhaps even more than most target sectors assisted by USAID economic growth projects. It includes everything from computer hardware and packaged software resellers and installers; telecommunications services providers (Internet and phone services); software developers; software integrators; and IT savvy consultants who help organizations define and meet their IT needs and adjust their business processes to take advantage of ICT. These sub-sectors are interdependent, and today most software applications take advantage of telecommunications networks and services.

For this technical brief, we will refer to the sector as a whole. If the sector is selected as a target sector, the project team quickly narrows its focus to specific sub-sectors. Most projects focus on high value sub-sectors, such as software development and integration and IT consulting services.

We consider business process outsourcing (BPO) of ICT services a part of the sector. This includes programming and system integration services provided on a BPO basis (i.e., at a remote location from the customer, often another IT firm or IT department of a firm) and even remote IT facilities management. We do not consider BPO services in general as part of the ICT sector, because many of these services are simply ICT-enabled services, not ICT services *per se*. For example, marketing, customer support services or transcription services offered on a BPO basis are ICT-enabled but do not require ICT skills to deliver the services themselves so they would not be included in the ICT sector *per se*. These sectors may be great candidates for target sectors themselves and have potential for significant job creation, but should be evaluated separately from the ICT sector.

## 3. ICT as a Target Sector to Improve Economic Growth Directly

### A. In General, How do Projects Select Target Sectors?

Before examining criteria for evaluating the ICT sector as a potential target sector, we turn first to the general criteria USAID economic growth projects typically use to select target sectors:

1. The sector's **potential impact on the economy** – measured as increased revenue as well as increased employment.
2. The **absence of any “show stoppers”** to the sector's growth that have a low probability of being eliminated (including no apparent political will). This includes anything in the business enabling environment, such as laws, policies, and regulations (or the low capacity of regulators or policy makers to play their roles) that seriously constrains competition in the sector and is unlikely to change due to lack of political will.

3. **Motivation of the stakeholders** within the sector – ensuring they will work with the implementing partner to drive success and invest their time and resources. This also encompasses **momentum to build upon**, e.g., recent, concrete, success in a particular market, new private sector investments, or “sparks” of innovation in a few firms a competitiveness project can build upon.
4. An apparent **demand for the sector’s outputs** and the ability to compete successfully in target market(s).
5. Evidence that the sector has the **necessary inputs** (skilled employees, sufficient number of motivated firms).

#### **ICT as a Target Sector: EGIP**

With limited resources, the Enterprise Growth and Investment Project (EGIP) in Bulgaria helped integrate the ICT cluster which allowed it to work together on market and investment opportunities. The project built trust between local ICT firms which led to greater cooperation on client projects and allowed it to be more productive managing more client projects with fewer inputs.

It is important to point out that target sectors are selected based on how they measure up to these criteria *relative to each other*. A sector is never selected in isolation because a competitiveness project tries to maximize its impact across selected sectors.

### **B. When is ICT a Good Target Sector for Competitiveness Work?**

Table 1, on the following page, summarizes how these five general factors can be tailored to the ICT sector to help decide whether to select ICT as a target competitiveness sector, comparing it to the relative impact of other potential target sectors. Note that the first criterion – potential impact on the economy – focuses on *direct* impact, not the catalytic impact mentioned above. It is important to evaluate the *direct* impact when considering the sector as a target sector. (In section 5 below, we will address how to assess the catalytic or indirect impact.)

Almost half the projects interviewed selected the ICT sector in the initial project stage; in about a quarter of the projects, the USAID mission specified the ICT sector as a target sector in the request for proposal so we do not know how it was selected. In general, most projects reported that selecting the ICT sector as a target sector was a “no brainer,” probably an indication of a project team mixing in their minds the merits of the sector as a true target sector and a catalytic sector.

The majority of projects with ICT as a target sector measured their success in new jobs created. Given the high skills needed for most jobs in the ICT sector, coupled with relatively high revenue per employee, this measurement is not always appropriate. This is important to keep in mind when comparing ICT to other potential target sectors like agriculture or tourism where the skills and the breakeven point per employee are not as great. There are several projects that worked with the ICT sector but created fewer than 100 jobs, only a handful of projects reported greater gains.

The second criterion (absence of any show stoppers) is a particularly important one for the ICT sector. Without a reasonable telecommunications legal and regulatory enabling environment, the sector is unlikely to be able to be competitive in the longer run, because the sector may have insufficient competition (especially in telecommunications services, critical for almost any ICT services), making prices higher than competing markets and stifling innovation – which is critical to stay ahead in the ICT sector. The good news is that with relatively small (and

inexpensive) changes to the enabling environment, these issues can be addressed. Several projects interviewed did just that (e.g., the AMIR project in Jordan and The New Economy Project in Jamaica).

If during the sector evaluation stage, it is determined the environment is not indeed reasonable and it is unlikely there is the political will or capacity (even with capacity building assistance) to change it, then any work with the sector will probably be at a great competitive disadvantage and may not be worth it.

A few key legal and regulatory issues to assess during the sector evaluation process are:

- The transparency and fairness of the regulatory process itself;
- How many licenses are issued for services and how expensive and cumbersome it is to bid for them;
- How interoperability and number portability is handled; and how services are defined to encourage delivery approaches that can take advantage of innovations in a fast changing sector.

Also it will help to understand the role, dominance and current ownership of the dominant incumbent land line service provider, usually a prior monopolist, either public or private.

| <b>Table 1: Sector Selection Criteria Honed to the ICT Sector</b> |   |
|---|---|
| <b>Sector Selection Criteria</b>                                  | <b>Honed to ICT Sector</b>  |
| 1. Potential impact on the economy                                | <ul style="list-style-type: none"> <li>• Is there critical mass – enough players to be a base for growth?</li> <li>• Is the probable impact on chosen metrics (usually jobs or revenue) sufficient relative to other candidate target sectors?</li> </ul>   |
| 2. Absence of any “show stoppers”                                 | <ul style="list-style-type: none"> <li>• Reasonably priced and accessible telecom services.</li> <li>• No political/gov’t show stoppers – e.g., monopolist’s dominance keeping prices high and access, innovation regulatory capacity low.</li> <li>• Unreasonably high tariffs for ICT equipment.</li> </ul>   |
| 3. Motivation of the stakeholders and momentum to build upon      | <ul style="list-style-type: none"> <li>• A private sector champion who is willing to invest and promote the sector and ICT usage for larger good.</li> <li>• Government champion (e.g., education ministry or IT related ministry).</li> <li>• At least a few innovative players with a “spark” – i.e., competing well in target market. Signs of collaboration, with possible strong ICT association.</li> <li>• Interest from strategic partners; investors; global ICT players.</li> </ul> |
| 4. Demand for the sector’s output                                 | <ul style="list-style-type: none"> <li>• Signs of some success in specific market (e.g., mobile applications; animation).</li> <li>• Strong market linkages with other countries (including Diaspora connections),</li> <li>• Growing and strong demand for IT services, e-govt initiatives, from growing non-ICT sectors; strong internal market with use of local IT Market.</li> </ul>   |
| 5. Sector has required inputs                                     | <ul style="list-style-type: none"> <li>• Presence of higher education entities providing solid math, engineering graduates.</li> <li>• Training available on latest technical tools like Microsoft, Cisco &amp; Java, plus project management &amp; entrepreneurship training – and ICT as part of business degree programs.</li> <li>• Competitively priced labor. Financing for firms to grow.</li> </ul>   |



High tariffs on high technology equipment can also be a “show stopper” given that this equipment is a prerequisite for the ICT sector and changes quickly, requiring new purchases, often from overseas. Of course, this may not be a “show stopper,” but something that can be addressed if the ICT is selected as a target sector.

A few resources that may be useful in conducting the evaluation for this criterion are listed in Appendix C, including references to help find for relative prices for mobile phone and Internet services and penetration of services as well as documents on model telecommunications legal and regulatory environments from the World Bank and the International Telecommunications Union (ITU). These sources are also useful if the ICT sector is selected to develop the project’s sector strategy to look at comparative statistics for potential competitors and those of the target market.

The last three criteria apply to the ICT sector essentially the way they would apply to any candidate target sector. Just a few points warrant special emphasis:

- Most projects interviewed mentioned that momentum and solid leadership within the ICT sector saved the project time (several months to a year) and effort and were important selection criteria. A solid ICT association is helpful but of course that can be strengthened (and even created) if ICT is selected as a target sector. Also projects interviewed pointed out that sometimes momentum has been created with the help of firms such as Microsoft, HP and Cisco.
- ICT export promotion was the major focus of most projects. Domestic demand for ICT services often starts with the national government. This source of demand may not be sufficient to allow the sector to grow unless the country is fairly large.
- ICT firms tend to be small (e.g., well under 20 employees) and form alliances to address customer demands, so finding only clusters of small firms without one or two larger firms need not be reason for rejecting ICT as a target competitiveness sector. Most projects looked for at least a core set of firms that use up to date development tools or are certified partners or representatives of international ICT tool providers, such as Microsoft, Oracle, and Cisco (or more specialized international firms). That is usually a sign that these firms are keeping up with changes in technology. Too few firms in the sector can be a negative; there may just not be enough to build upon.

Well trained workers are critical inputs for any target sector but for the ICT sector, it is particularly important that there are sources for a steady stream of new employees with up to date skills (and an educational system with the interest in and means to providing this) as well as ways for the work force to update skills regularly. Any certification programs are less important to find at the evaluation stage because the need for them should be driven by the demand in the target market(s) and the strategy the project defines to strengthen the sector. Also “input supply” would include reasonably priced access to advanced (e.g., broadband Internet; GPRS) telecommunications services.

#### ***ICT as a Target Sector: TCP***

The Competitiveness Project (TCP) in Sri Lanka helped reduce telecom rates by 70% which helped drive new investment into the ICT sector. In turn the new investment created 4,000 new jobs in the ICT sector in 2004 as reported by the Sri Lanka ICT association.

Table 2 provides examples of candidate project activities for projects that are focusing on ICT as a target sector directly.

| <b>Table 2: Candidate Activities to Promote ICT as Catalyst for Economic Growth</b> |   |
|---|---|
| <b>Objectives</b>   | <b>Candidate Activities</b>   |
| 1. Create opportunities for ICT firms to engage with international markets          | <ul style="list-style-type: none"> <li>• Develop strategies to connect ICT capabilities of sub-sectors to niche market opportunities domestically (e.g., other non-ICT sectors such as financial services and government) or internationally</li> <li>• Train and coach ICT firms on ways to engage with market players at international trade shows</li> <li>• Facilitate the creation or strengthening of an ICT association that helps with such activities</li> <li>• Facilitate focused trade trips with laid out strategies and selling points,</li> <li>• Coach on consultative sales<sup>2</sup> approaches and tracking</li> <li>• Establish lasting business linkages with Diaspora groups</li> </ul> |
| 2. Support Innovation and ICT Growth Opportunities                                  | <ul style="list-style-type: none"> <li>• Support public-private venture funds</li> <li>• Support for financial intermediation services for debit and equity transactions</li> <li>• Support partnering opportunities within the sector</li> <li>• Support research relationships with technical engineers</li> </ul>  |
| 3. Increase supply of engineering and ICT skills                                    | <ul style="list-style-type: none"> <li>• Ensure that engineering and technical schools understand skills needs of the ICT sector and have on-going process for keeping school curriculums in synch with ICT sector demand; consider internship programs</li> <li>• Link engineering schools and technical schools with international IT firms</li> <li>• Link engineering schools and technical schools with international schools</li> <li>• Create marketing and awareness campaigns that interest youth into science, engineering and technology</li> </ul>  |

#### **4. ICT as a “Catalyst” to Competitiveness in non-ICT Sectors**

##### ***A. Why and when does this make sense?***

In section 3 above, the question addressed was whether to select ICT as a target sector for competitiveness work to support economic growth directly. A separate question is whether to

<sup>2</sup> This is a sales consulting approach that focuses on consultant solving problems not selling products. <http://www.mackhananconsultativeselling.com/>

### **Using ICT to Improve Success of Pineapple Target Sector in Ghana**

TIPCEE, a multi-faceted competitiveness project in Ghana, is facilitating the development and use of a software application (with connectivity via a cell phone network) to ease the burden of end market traceability requirements, the precision of farming processes (which increases export yields) and the success of meeting end market order quality, volume and timing requirements. Farmers will use the application (now being developed) via PDA's or cell phones and packhouses will use it via PC's.

focus on the sector for its catalytic or *indirect* effects on a country's economy. A project might decide to do one or both of these.

Based on the evidence below, we suggest that almost all competitiveness programs should try to strengthen ICT's catalytic effects to improve a country's economy whether or not they select ICT as a target sector itself.

There is solid evidence that investments in and use of ICT by businesses generally strengthens a country's economy. We also know that adopting ICT has a positive effect on economic growth. Here is what we know:

- Using ICT across all sectors helps firms increase their overall efficiency, thus raising productivity across the economy. Further, investment in ICT capital contributes to overall capital deepening and therefore helps raise labor productivity.<sup>3</sup> That means if a company invests in ICT, its non-ICT investments will be more productive.
- Increases in usage of broadband Internet services are positively associated with increases in non-farm employment. In the US specifically, for every one percent increase in broadband Internet penetration, employment is projected to increase by 0.2 to 0.3 percent per year.<sup>4</sup>
- Greater access to communications technology (in this study, mobile phones) translates into greater economic benefits for the entire country: Given mobile phones are often the first form of telecommunications accessible in a developing country (where fixed line service typically has very low penetration), the impact of mobile phone networks on the economy is substantial. "A developing country that had an average of 10 more mobile phones per 100 people between 1996 and 2003 would have enjoyed per capita GDP growth that was 0.59% higher than an otherwise identical country."<sup>5</sup>

Clearly a developing country's economy can benefit from businesses' use of ICT to increase their productivity. These businesses must have access to competitively priced telecommunications services; ICT know-how (from others, as well as, ideally, their own employees); and reasonably priced ICT services. This does not mean that the ICT know-how necessarily has to be provided by a local economy especially if a country is small and ICT firms from elsewhere can easily provide their services across borders to the target country's businesses.

<sup>3</sup> *The Economic Impact of ICT: Measurement, Evidence and Implications*, OECD 2004, pp. 77-79.  
<http://www.oecdbookshop.org/oecd/display.asp?sf1=identifiers&lang=EN&st1=922004051p1>

<sup>4</sup> Crandall, Robert et al., "The Effects of Broadband Deployment on Output and Employment: A Cross-sectional Analysis of US Data," in *Issues in Economic Policy*, The Brookings Institution, Number 6, July 2007.  
[http://www.brookings.edu/reports/2007/06labor\\_crandall.aspx](http://www.brookings.edu/reports/2007/06labor_crandall.aspx)

<sup>5</sup> The impact of Telecoms on Economic Growth in Developing countries, Waverman, Meschi & Fuss 2004, pp 2.  
<http://web.si.umich.edu/tpcr/papers/2005/450/L%20Waverman-%20Telecoms%20Growth%20in%20Dev.%20Countries.pdf>

Hence, to promote economic growth in general, it makes sense to:

- (1) Help increase the chances that businesses can recognize and implement ways to use ICT to boost their competitiveness in their chosen markets and
- (2) Facilitate increased access to affordable broadband internet access and mobile phone services as well as affordable ICT devices such as PC's, cell phones or PDA's (i.e., personal digital appliances such as Palm Treos).

Given how ICT can help increase an economy's competitiveness in general, when would a USAID mission or competitiveness project not focus on ICT as a catalytic sector? Of course, a project will need to sort out its priorities given resources available and an estimate of relative return on investment for a range of activities. If a project chooses to address ICT's catalytic effects, the next section discusses candidate activities.

## **B. Programmatic Implications of Treating ICT as a “Catalytic Sector”**

Any project or mission should consider addressing ICT as a catalytic sector during initial project or program design and during the development of each target sector strategy.

To promote ICT's catalytic effects on an economy, a project can focus generally on the factors identified above – i.e., increase the chance businesses can recognize and implement ways to use ICT to boost their competitiveness and facilitate increased access to affordable broadband internet access, mobile phone services and the requisite ICT devices. This may work for some projects that can address key changes to the telecommunications legal and regulatory environment, tariffs on ICT equipment or incorporating ICT know how into any general work force development activities.

Another approach that has worked for several projects is grounding this catalytic effect in work with the project's non-ICT sectors – where can ICT offer opportunities to increase competitiveness or help reduce known priority constraints within the sector and its value chain? This can help focus activities to increase the use of ICT within a known and promising sector – whose members may become the natural constituents to advocate for any needed legal or regulatory changes (ideally along with a strong ICT association). This can also provide a way of weighing the relative importance of such ICT related activities – how much could they increase the success of work with a particular sector? This can help avoid using technology (or too much of it) for its “coolness factor,” something that all too often happens, leading to unsustainable approaches that are not scalable without project subsidies.

### ***ICT as a Catalyst in Non-ICT Target Sectors: VNCI***

The Vietnam Competitiveness Initiative (VNCI), with local ICT industry leaders, conducted an ICT needs survey of two of its target sectors, fruit and tourism, to determine the major business issues and how ICT could solve those problems. They presented the results to stakeholders in both sectors with recommendations of technologies that could be used to enhance the sectors' productivity. The study fostered interaction between the industries and a wider adoption of ICT within the studied sectors to help them grow.

A project might also want to include more general activities to increase ICT’s catalytic effects, such as working to incorporate the use of ICT tools in any business related training it supports. This might be done through a business innovation center such as the one developed in USAID project partnership with Microsoft in Croatia.<sup>7</sup> The center – as part of Microsoft’s global network of such centers – can provide workshops on how ICT can be used in innovative ways within a specific sector such as construction, involving members of the local ICT sector as well as members of the specific sector. This goes far beyond focusing on general business use of ICT (e.g., ICT for small businesses across all sectors) to applications to boost productivity in specific sectors.

| <b>Table 3: Activities to Increase Catalytic Effect of ICT</b>  |   |
|---|---|
| <b>Maximizing Catalytic Effects of ICT</b>  | <b>Candidate Activities</b>   |
| 1. Telecommunications services (both broadband Internet and mobile phone service) should be accessible and affordable | <ul style="list-style-type: none"> <li>• Conduct analysis of affordability by starting with sources in Appendix B of this report.</li> <li>• Ideally with an ICT association, work with telecom legal and regulatory environment to increase level playing field for competition; universal service approach; openness to new technological approaches.</li> <li>• Help private players implement proven, new business and tech models to extend access of affordable services.<sup>6</sup></li> </ul>  |
| 2. Use ICT-enabled interventions to improve the success of target non-ICT competitiveness sectors.                    | <ul style="list-style-type: none"> <li>• Look for ways ICT can help address priority constraints / opportunities identified during value chain analysis and maximize success of the identified value chain strategy to reach end markets. This means making sure sector experts assisting the project are ICT-savvy, knowing how end markets and competitors use ICT to succeed.</li> <li>• For expensive ICT-enabled capabilities, use a tender process; facilitate the use of a third party to provide a critical ICT-enabled service to many sector players so more can afford it without each firm having to make costly investments.</li> <li>• Write white papers that act as marketing and education papers to inform the local industry how they can address those constraints.</li> <li>• Support local IT shows so the local ICT industry can meet with local private sector.</li> <li>• Facilitate programs related to ICT in business associations and innovation centers.</li> </ul> |
| 3. Employees – new and old – are ICT-savvy so they recognize ways ICT can help their businesses improve.              | <ul style="list-style-type: none"> <li>• Work force training integrating ICT tools.</li> <li>• Contests related to great ways ICT used to help a business grow.</li> <li>• Better integration of ICT into schools, universities, training institutes, internships.</li> </ul>   |

<sup>6</sup> USAID/I&E/ICT’s team can provide information on these new technology and business models. Contact [jpayne@usaid.gov](mailto:jpayne@usaid.gov) .

<sup>7</sup> See <http://www.microsoft.com/croatia/msptc/en/about.msp> . The center in Croatia was developed with support from USAID/Croatia, Microsoft, Cisco, Hewlett Packard and Croatian Telecom. It focuses on the ICT sector in particular. For more information on Microsoft’s network of innovation centers, see <http://www.microsoft.com/about/brandcampaigns/innovation/centers/default.msp> .

Table 3 provides some suggestions for promoting ICT's catalytic effects. In mid 2008, the Business Growth Initiative will issue another technical brief which will address this topic in more depth. Briefly, a prerequisite for selecting activities is at least a quick analysis of the use of ICT by businesses within the country, ease of access to affordable and appropriately packaged ICT services within the country and across borders; as well as accessibility of affordable telecommunications services and related equipment. Further, during the analysis of each candidate target sector (or value chain) and design of the target sector strategy and implementation, the project team should include using an "ICT filter" to identify ways ICT can increase the return on investment of working with each chosen sector.

## 7. Summary Recommendations

This technical brief is based on interviews, review of research related to ICT and economic growth and observations and consultations with those in USAID missions and implementing partners grappling with this topic. Our key recommendations for USAID mission Economic Growth teams and implementing partners are:

- Target sector selection criteria for competitiveness work should be applied with the same rigor to the ICT sector as to any other candidate sector, assessing the ICT's sector potential for meeting key targets (e.g., more employment, more business revenue) *relative* to non-ICT sector candidates.
- In some cases, projects have shown that working with ICT as a target sector can be successful, but it appears that the sector has been selected too often in the past with relatively modest impact and gains for the country's economic growth.
- Research shows that ICT can have a positive catalytic effect on economic growth by enhancing productivity and innovation throughout a country's economy. Given this, we recommend USAID economic growth projects try to leverage this catalytic effect with a variety of activities that are different from activities that focus on growth of a country's ICT sector itself. These catalytic activities should be aimed at helping to increase the chances businesses can recognize and implement ways to use ICT to boost their competitiveness and increasing access to affordable telecommunications services and devices to use them.
- Activities aimed at this catalytic effect can be broad based (e.g., improving the telecommunications legal and regulatory environment to increase fair and open competition and encourages innovation) or incorporated into project work with specific non-ICT target sectors.
- For any non-ICT target activity, projects should look for ways ICT can help address priority constraints faced by sector participants or offer opportunities to increase their competitiveness. This should be incorporated during sector analysis, strategy development and implementation. A future BGI technical brief will offer more insights into how to do this.

## Appendix A: Survey Participants

The following nineteen USAID funded economic growth projects were interviewed. All of these projects have (or had) the ICT sector as a target sector.

| Country            | Project Name  | Location  | Dates     | Web-Site  |
|--------------------|---|-----------|-----------|---|
| Armenia            | Competitive Armenia Private Sector Program (CAPS)                 | EE & EA   | 2005-2010 | <a href="http://www.caps.am/eng/index.asp?page=front">http://www.caps.am/eng/index.asp?page=front</a>   |
| Worldwide          | TESS Project  | Worldwide | 2002-2005 | <a href="http://www.tessproject.com/">http://www.tessproject.com/</a>   |
| Bulgaria           | Enterprise Growth and Investment Project                          | EE & EA   | 2000-2005 | <a href="https://www.businessgrowthinitiative.org/ResourceCenter/Lists/USAID%20Enterprise%20Development%20Activities/Attachments/31/Bulgaria_Enterprise%20Growth%20Investment%20End%20Project%20Rpt%202005%20MSI%20PDACF739.pdf">https://www.businessgrowthinitiative.org/ResourceCenter/Lists/USAID%20Enterprise%20Development%20Activities/Attachments/31/Bulgaria_Enterprise%20Growth%20Investment%20End%20Project%20Rpt%202005%20MSI%20PDACF739.pdf</a> |
| Caribbean Regional | Eastern Caribbean ICT   | LAC       | 2001-2004 | <a href="http://www.carana.com/ecict/">http://www.carana.com/ecict/</a>   |
| Colombia           | Colombia Enterprise Development (CED) Program                     | LAC       | 2003-2006 | <a href="http://www.carana.com/projects/descriptions/colombia_ced.htm">http://www.carana.com/projects/descriptions/colombia_ced.htm</a>   |
| Croatia            | Enterprise Support Program  | EE & EA   | 2004-2008 | <a href="http://www.dai.com/work/project_detail.php?pid=13">http://www.dai.com/work/project_detail.php?pid=13</a>   |
| Croatia            | Competitiveness Initiative  | EE & EA   | 2001-2004 | <a href="http://www.jeaustin.com/001.html">http://www.jeaustin.com/001.html</a>   |
| Egypt              | ICT Entrepreneurship  | ANE       | 2005-2007 | <a href="http://www.ibdcegypt.com/">http://www.ibdcegypt.com/</a>   |
| Jamaica            | New Economy Project   | LAC       | 2000-2004 | <a href="http://www.neweconomyproject.com/">http://www.neweconomyproject.com/</a>   |
| Jordan             | Sustainable Achievement of Business Expansion and Quality (SABEQ) | ANE       | 2006-2011 | <a href="http://www.sabeq-jordan.org">http://www.sabeq-jordan.org</a>   |
| Jordan             | Achievement of  | ANE       | 1998-2007 | <a href="http://www.chemonics.c">http://www.chemonics.c</a>   |

|                |   |         |             |   |
|----------------|---|---------|-------------|---|
|                | Market-Friendly Initiatives and Results Program (AMIR)                      |         |             | <a href="http://www.chemonics.com/projects/default.asp?content_id={FC012A36-5C29-4CFB-8D6B-D0726C97CEE0}">om/projects/default.asp?content_id={FC012A36-5C29-4CFB-8D6B-D0726C97CEE0}</a>   |
| Moldova        | Competitiveness Enhancement and Enterprise Development (CEED)               | EE & EA | 2005-2010   | <a href="http://www.chemonics.com/projects/submit_search_contracts.aspx?showBack=1&amp;ckCurrent=1&amp;selRegion={83D6E437-554D-4EC9-925C-15EEFB32DF16}">http://www.chemonics.com/projects/submit_search_contracts.aspx?showBack=1&amp;ckCurrent=1&amp;selRegion={83D6E437-554D-4EC9-925C-15EEFB32DF16}</a> |
| Moldova        | Support to Micro, Small, and Medium Enterprise Development (BIZPRO/Moldova) | EE & EA | 2001-2006   | <a href="http://www.bizpro.md/">http://www.bizpro.md/</a>   |
| Sri Lanka      | TCP Competitiveness Initiative  | EE & EA | 1999-2007   | <a href="http://www.competitiveness.lk/">http://www.competitiveness.lk/</a>   |
| Thailand       | SE Asia Competitiveness Initiative  | EE & EA | 2001-2004   | <a href="http://www.kiasia.org/EN/Group_Tier2.asp?GroupTierId=1&amp;SubGroupTier_ID=47">http://www.kiasia.org/EN/Group_Tier2.asp?GroupTierId=1&amp;SubGroupTier_ID=47</a>   |
| Ukraine        | Support to Micro, Small, and Medium Enterprise Development (BIZPRO/Ukraine) | EE & EA | 2000-2006   | <a href="http://www.bizpro.org.ua/clients/bizpro/weben.nsf">http://www.bizpro.org.ua/clients/bizpro/weben.nsf</a>   |
| Vietnam        | SE Asia Competitiveness Initiative  | EE & EA | 2002-2003   | <a href="http://www.jeaustin.com/001.html">http://www.jeaustin.com/001.html</a>   |
| Vietnam        | Vietnam Competitiveness Initiative (VNCI)                                   | EE & EA | 2003-2008   | <a href="http://www.vnci.org">www.vnci.org</a>  |
| West Bank/Gaza | Market Access Program (PED)   | EE & EA | 2004 - 2007 | <a href="http://www.dai.ps/">http://www.dai.ps/</a>   |



## Appendix B: Discussion Questions

1. Are there circumstances when the ICT sector should indeed be a target sector in a project focused on increasing jobs, even though the potential number of jobs created is far fewer relative to other sectors because, for example, the jobs are highly skilled and visible and could encourage more ICT-related work force training?

2. Do you agree with the following statement in the brief?

Based on the evidence [cited] below, we suggest that almost all competitiveness programs should try to strengthen ICT's catalytic effects to improve a country's economy whether or not they select ICT as a target sector itself.

3. Is it important – and to what extent – that local ICT firms provide some or most of ICT-related services to local non-ICT sector businesses when a project is focusing on ICT as a catalyst and not ICT directly as a target sector? Even in very small countries with weak ICT sectors when firms from neighboring countries can more easily meet the demand? What types of project activities might help tackle this challenge?
4. Do you have some good examples of best practices related to project activities and approaches for working with ICT as a target sector – or as a catalyst for growth in other target sectors?

## Appendix C: Other Resources

1. The World Bank provides “ICT at a Glance” pages for many countries, summarizing key telecommunications statistics across years and sources:  
<http://go.worldbank.org/FDTYJVBR60>.
2. The World Bank’s Global Information and Communications Technology (GICT) Department also offers a wide variety of publications, some addressing telecommunications issues globally, some regionally and some country specific. See <http://go.worldbank.org/NR19Z9PXQ0>.
3. The International Telecommunications Union ([www.itu.int](http://www.itu.int)) has useful reports and data, some on a fee basis. One useful publication might be *Trends in Telecommunication Reform 2007: The Road to Next-Generation Networks (NGN)* 8th edition, 2007, <http://www.itu.int/publications/publications.aspx?lang=en&media=electronic&parent=D-REG-TTR.9-2007>.
4. For those with access to USAID’s intranet, the USAID Economic and Social Data provides access to useful statistics from various sources. Click on this link: <http://ppc.usaid.gov/esds/economy.cfm> select "Infrastructure and Technology" and review the indicator series in the drop down menu or here is a directly link within this USAID database to ITU data: [International Telecommunications Union](http://www.itu.int).

## **Addendum to the BGI Brief: When Should the ICT Sector be a Target for Private Sector Competitiveness Work?**

The second part of the Business Growth Initiative (BGI) project's goal is to build "a community of best practices for enterprise development" within the worldwide development community. To that end we called for feedback on the BGI brief "*When Should the ICT Sector be a Target for Private Sector Competitiveness Work?*" This addendum was written to share the feedback received about the brief as well as the responses from one of the brief's authors, Micheal Ducker.

If you would like to add your comments on this brief go to <https://www.businessgrowthinitiative.org/blog>.

### **1. Feedback from Mark Frazier of Open World**

*"My one comment concerns the job-creation impacts of the ICT Competitiveness projects.*

*Several of the ICT competitiveness projects, as you mentioned, did hasten telecommunications liberalization and a steep plunge in international telecommunications prices. These changes came about because ICT Clusters, most of whose members would qualify as being part of a rigorously-defined ICT sector, pressed for them. Their motives in doing so were to help their own ventures (quite small ones, as you point out) fare better in global markets.*

*Yet their actions had important externalities in overall job creation. Large scale ICT-enabled service firms — principally call centers — were able to create thousands of jobs in Bulgaria and Sri Lanka in consequence of the lower international telecommunications prices made possible through the ICT Clusters' lobbying efforts.*

*I think similar scenarios are possible in other countries in the future."*

### **Response from Mike Ducker, BGI**

"Mark brings up an excellent point. The ICT sector, through different institutional clusters or IT associations, has advocated for improvement in telecommunication policies because of the obvious and direct positive impacts on the IT sector. Research shows that increased use of telecommunication services by all sectors increases economic growth. Thus, I would suggest dialogue needs to shift from IT associations to the Chambers of Commerce and Apex business associations, helping to build greater support and momentum for telecommunication reforms."

### **2. Feedback from Scott Jazyuka, former Chief of Party of the Egypt ICT Entrepreneurship Project**

*"It is interesting to see USAID's perspective on justifying support for the sector. Just a couple of comments, based on my experiences, are:*

- 1. The importance of ICT enabled content (both language and culture) is important as a "catalyst" and does not seem to be addressed in the paper.*

2. *Although the importance of the ICT sector export markets is mentioned, there are a fair number of ICT sub-sectors that are essentially global and are very good opportunities for focus. The initial identification and launching of these sub-sectors needs to be driven by the local private sector. USAID and other support may come in to assist in ramping up marketing, financing and other general support. I am not sure if I saw anything on this.”*

### **Response from Mike Ducker, BGI**

Scott’s points are important when looking at ICT as a competitiveness sector and, although we touched on these subjects, we did not go into details. During the sector selection process of a competitiveness project, one should consider the demand for each sector. For ICT this means ensuring a country has a unique sub-sector with a growing market. For example, Egypt has been a longstanding center of Arabic entertainment, education and media. This strength has helped Egypt play an important role in localizing software, media and other education items into Arabic and exporting the products to the growing Arabic-speaking markets. Having localized software in turn allows more of the private sector in other countries to utilize IT systems to their advantage. So Egypt’s strength in localization services matches a growing market need. This is a positive indicator for selecting ICT as a competitiveness sector in Egypt.

### **3. Feedback from John Cann, Development Alternatives Inc.**

*“The authors nicely present the supply (ICT as a competitiveness sector) and demand (ICT as a catalytic sector) but don’t do enough to tie them together. They need to work more on getting the benefits of ICT. Also there are some good lessons learned from VNCI on this.*

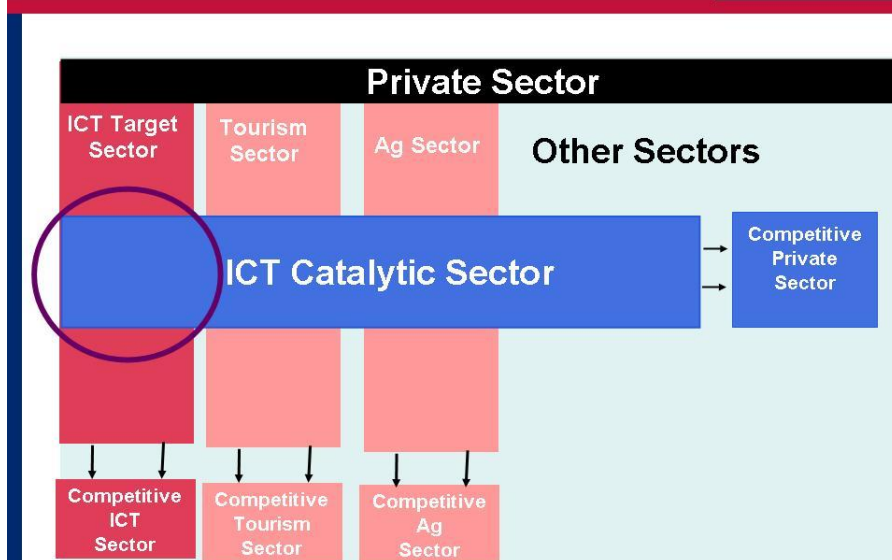
*a. Often time, technology investments can actually reduce employment at the enterprise levels; firms can do more with less given the technological inputs.*

*b. For ICT to act as a catalytic sector it is often very difficult to do the Monitoring and Evaluation (M&E) (especially with tight budgets) on these activities to discover the value add (cost savings and productivity).*

### **Response from BGI – Mike Ducker**

See the following diagram on the way BGI describes ICT as competitiveness and catalytic sectors.

## The two views on how ICT supports Competitiveness and economic growth



John's comment on technology investment actually reducing employment is very interesting. While I think there is some truth to the logic, especially looking at an individual enterprise in the short term, we see a different picture if one looks at it through a competitiveness lens. As research has shown, the use of technology can make firms more productive and therefore able to produce more outputs with smaller amount of inputs. A more productive firm should be able to grow its market penetration and grow its business. If there was a specific sector using more technology, it should also be more productive and able to grow its market share. This would likely translate into higher sales per employee, which should increase wages. At the same time, it creates opportunities for increased employment due to growing enterprises and sectors.

The reverse scenario would be for enterprises not to invest in technology while their competitors are doing so. As a result, they would be less productive and probably lose market share, subsequently requiring them to reduce workforce levels. This is not a universal rule because different sectors have different productivity gains from utilizing technology. For example, the finance sector will reap higher productivity gains from IT investment than the transportation sector.

This leads us back to John's point about the interaction between the catalytic (demand) and the competitiveness (supply) sectors of IT. Non-ICT sectors using more IT will increase the demand of IT products and services, leading to the creation of more, higher-paying ICT jobs.

John's comment on M&E is very true. It is difficult and costly to estimate the impacts that project initiatives will have, and most projects do not contain the financial resources to do such analysis.