MarketMakers
CATALYST FOR CHANGE

FACILITATING YOUTH EMPLOYMENT IN THE INFORMATION TECHNOLOGY (IT) SECTOR
IN BOSNIA & HERZEGOVINA

Roel Hakemulder
Andrew Wilson

:·: **MarketMakers**

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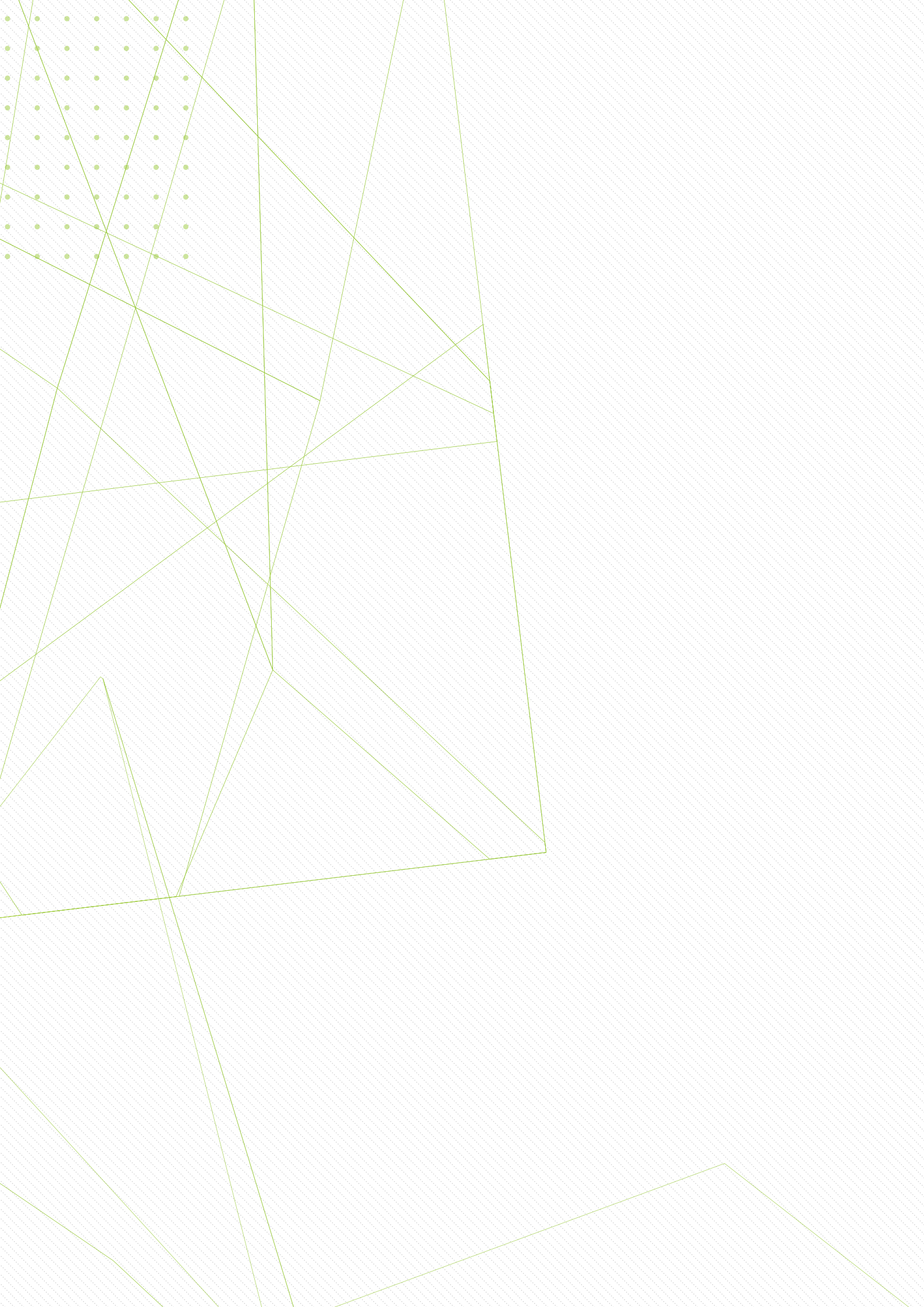## IN BOSNIA & HERZEGOVINA

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CONTENTS

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Summary of Abbreviations

BiH   Bosnia and Herzegovina

IT   Information and Technology

SDC   Swiss Agency for Development and Cooperation

SERDA Sarajevo Economic Region Development Agency

WEF   World Economic Forum

EU   European Union

MoU   Memorandum of Understanding

BAM   Bosnian Convertible Mark

ICBL   Innovation Centre of Banja Luka

MSD   Market Systems Development

SIDA   Swedish International Development Cooperation Agency

RDAs   Regional Development Agencies

01

Background

1.1.   Youth unemployment – a crisis in the Western Balkans

With an overall unemployment rate of 43% over the past 5 years, and youth unemployment hovering around 60% over the same period, Bosnia and Herzegovina's (BiH) youth are losing hope and making drastic choices. Between 2006 and 2012, some 150,000 people left, mostly for the EU, the US and Australia; the World Bank estimates that 28.6% of those completing tertiary education leave the country.[1] A survey by the Youth Information Agency found that 81 per cent of young women and men questioned would leave "tomorrow" if they had the chance, because they see no opportunities in their own country.[2]

BiH is considered an upper middle-income country even though per capita income is only a quarter of the average in advanced European economies. Economic growth was negative or near zero between the 2008 financial crisis and 2014 when it increased to 1.2%, a rate too low to meaningfully impact unemployment rates or per capita income.[3] Low incomes and widespread unemployment were key causes of riots and the burning of government buildings in 2014. Compounding these problems, the country's history of conflict and complex administrative structure, resulting from the 1995 Dayton peace agreement, leads to a complex institutional framework that has achieved little progress towards national unity, economic reform or European integration. With a high percentage of existing formal jobs in the public sector, private sector investment is needed to drive balanced economic and employment growth in BiH. Private investors in BiH, however, face many challenges that lead to low levels of investment compared to similar countries.[4]

The Information and Technology (IT) sector is one of the most promising sectors in BiH to address youth unemployment. The sector is also recognised globally as a fast growing sector, which is attractive and can provide jobs especially for young women and men. The need for IT expertise is growing annually and is expected to do so in the future, not only in the IT sector but also in other sectors that increasingly need IT services.

The IT sector is defined as a combination of manufacturing and service industries, whose products capture, transmit or display data and information electronically. In addition, "the production (goods and services) of a candidate industry must primarily be intended to fulfil or enable the function of information processing and communication by electronic means, including transmission and display."[5]

In early 2013, the IT sector in BiH was growing, but increases in revenue and employment was stunted by a lack of qualified staff, limited access to international markets and low government support for the sector. Despite these shared problem, IT firms did not talk to each other or collaborate to address their problems.

1	 "Young people: The future of Bosnia and Herzegovina", Edward Ferguson, http://blogs.fco.gov.uk/edwardferguson/2014/10/21/young-people-the-future-of-bih/, October 21, 2014, Accessed March 2015, and Ms Ruzmira Tihie-Kadric's, Assistant Minister in the Ministry of Human Rights and Refugees, Bosnia and Herzegovina, speech in the Second High Level Dialogue on International Migration and Development, https://papersmart.unmeetings.org/media2/157963/21e-bosnia-and-herzegovina.pdf, October 3-4, 2014, New York, USA, Accessed April 2015.

2	"Most Young Bosnians would Emigrate "tomorrow", Survey says", Elivar Jukic, BalkanInsight,http://www.balkaninsight.com/en/article/some-80-young-bosnians-would-leave-survey, Jan 7, 2013, Accessed April 2015.

3	"Bosnia's Federation 2014 GDP expands by real 1.2%", SeeNews.com, https://seenews.com/news/bosnias-federation-2014-gdp-expands-by-real-1-2-484252, July 15, 2015, Accessed August 2015.

4	"Bosnia and Herzegovina: Concluding Statement of the 2015 Article IV Mission", International Monetary Fund, https://www.imf.org/external/np/ms/2015/051215.htm, May 12, 2015. Accessed August 2015.

5	"Information economy product definitions based on the central product classification (version 2), OECD, Digital Economy Papers No 158, 2009.

1.2.   The case study

This case study looks into the role of the MarketMakers project of the Swiss Agency for Development Cooperation (SDC) in addressing youth unemployment in the IT sector. The project, implemented by HELVETAS Swiss Intercooperation and Kolektiv d.o.o./Pasao.ba, has been addressing the youth unemployment issue since June 2013 with the main goal of *"Improved access to gainful and decent job opportunities for young women and men".* The first phase of the project runs from October 2012 to April 2017.

Simultaneously, SDC is funding two complementary projects in BiH: the *Youth Employment Project*, which focuses on the public employment services and youth employment policies, and *Skills for Jobs,* which supports improved relevance of formal and non-formal education and training. Together, the three projects provide a comprehensive approach to addressing the key causes of youth unemployment in BiH.[6]

Before the MarketMakers project, the IT sector was underperforming. IT firms in the country were small-scale and highly fragmented with very low trust between firms. This hindered collective action to unlock faster growth. MarketMakers expects to benefit between four and five thousand young people within its first four years, of whom 50% will be women. Its strategy for doing so is to make markets work better, with better outcomes for young people using a Market Systems Development (MSD)[7] approach. Specifically, MarketMakers works with Regional Development Agencies (RDAs) as "co-facilitators", facilitating lasting change in the way market systems work in economic sub-sectors relevant to young people. These changes are expected to lead to creation of more jobs opportunities for young women and men have the information and capacities to take them up.

This case study was done less than two years after the project started supporting key market actors in the IT sector. It was therefore unlikely to already demonstrate the full eventual impact of the IT firms on jobs for young women and men. Two leading actors of the IT sector in BiH – HUB 387 and Bit Alliance – were used as entry to stimulate broader changes in the sector. The MarketMakers project were able to bring about greater awareness of IT as a career choice and an increasing number of students choosing IT education; improved public-private dialogue for changing perceptions of the IT sector in Government and the growth of trust between the Government and the private sector; and trust and interaction among IT private firms where entrepreneurship and innovation are valued, encouraging small companies and start-ups to grow more aggressively.

What has been achieved in this short period is nevertheless remarkable. If the project were to withdraw from the intervention, the changes would be likely to remain in place. This is an unusual success in such a short period of time.

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6   "Bosnia and Herzegovina overview", EBRD, http://www.ebrd.com/where-we-are/bosnia-and-herzegovina/overview.html, Accessed May 2015.

7   See https://beamexchange.org/market-systems/what-market-system/

02

Why Information Technology?

The MarketMakers project facilitates the creation of job opportunities for young women and men in three economic subsectors: IT; food production and processing; and tourism. The IT sector was the first market system that the MarketMakers project selected, together with the Sarajevo Economic Region Development Agency (SERDA). The IT sector was selected because:

→ *It was relevant to the project goal:* The estimated 20,000 IT workers made it an important employer, employing 60% young people; the sector is more attractive to youth than many other sectors.[8]

→ *It had growth potential:* Growth in the sector as a whole was a modest 0.8% annually. Initial investment costs are low and the number of companies was increasing.[9]

→ *Improvements were needed and likely to be feasible:* The World Economic Forum (WEF) ranked BiH's IT competitiveness as lowest in the region. Industry players expressed strong interest in collaborating with the project, and would stand to benefit from change.

→ *It had potential for gender mainstreaming:* 40% of IT workers were women (much like in the EU), but female participation in software development was much lower and had the potential to increase.[10]

Within the IT sector, the project chose to work with software development[11] because the sub-sector had the greatest promise. In 2011, software development had a growth rate of 7.5% due to start-ups and increasing demand in international markets, the highest growth rate in the country.[12] Software development had the second highest share of employment in the sector (30%, 6,000 employees),[13] including 20-30% women,[14] and the highest number of job advertisements. Young people were interested in the sector, and there was scope for enhancing participation of women. Based on research, the project concluded that the software development sub-sector could generate the substantial numbers of high-quality jobs for young women and men that it was targeting.

8   www.ekapija.ba. Accessed April 2013, from "Market Analysis of ICT sector in Bosnia and Herzegovina and Sarajevo Region", SERDA and MarketMakers, April 2013.

9   www.swot.ba. Accessed April 2013, from "Market Analysis of ICT sector in Bosnia and Herzegovina and Sarajevo Region", SERDA and MarketMakers, April 2013.

10   Interview with BH Telecom, 2012, from "Market Analysis of ICT sector in Bosnia and Herzegovina and Sarajevo Region", SERDA and MarketMakers, April 2013.

11   Business Process Outsourcing was another sub-sector MarketMakers selected but this paper focuses on its software development initiatives.

12   IDC Special Study: "Bosnia and Herzegovina IT Market 2010-2014" from "Market Analysis of ICT sector in Bosnia and Herzegovina and Sarajevo Region", SERDA and MarketMakers, April 2013.

13   Agency for Statistics of BiH, 2012 from "Market Analysis of ICT sector in Bosnia and Herzegovina and Sarajevo Region", SERDA and MarketMakers, April 2013.

14   Interviews with software companies (Walter, NGS, PING, AtlantBH), 2012 from "Market Analysis of ICT sector in Bosnia and Herzegovina and Sarajevo Region", SERDA and MarketMakers, April 2013.

03

Understanding the IT market system

Having selected a relevant sub-sector, the project proceeded with a market system analysis to identify constraints on its growth and find the underlying (or systemic) causes of these constraints. The research used secondary sources and numerous interviews with companies and private and public organisations connected to the sector. The sector was doing well, but IT firm owners indicated that there was great potential for growth which was not being realised.

The first level of MarketMakers' analysis identified the following set of problems hindering the growth and employment of more youth:

→ Companies were unable to access qualified professionals they needed, in particular high-level software developers. Without more staff they could not take on more demands from investors.

→ The local market was small and saturated preventing companies from developing linkages with export markets from international clients, or marketing their own products.

→ The Government in Canton Sarajevo, but also elsewhere in the country, had no effective strategy to develop the sector. The regulatory and policy environment were not supportive, and there were no budget allocations or specific programs for the sector.

MarketMakers continued its analysis in order to identify root causes that held back the growth of the sector. The results of this analysis would guide the project's activities over the following years.

3.1. Access to qualified staff

The formal educational system in the Sarajevo region produced 300 IT technicians and engineers annually, but according to firms, there could be jobs for up to 1,000.[15] The quality of existing graduates was also problematic, as IT firms found their skills to be out-dated, incomplete and too academic. Some level of obsolescence in IT education is normal, as the IT sector is developing at high speed and educational institutions struggle to keep up, but the gap between curricula and current requirements in BiH was unusually wide.

The lack of qualified staff led to a vicious circle where firms struggling to grow headhunted each other's employees, causing distrust and divisions between companies. This lack of trust, in turn, made collective dialogue with government to improve the education system impossible. As a result, companies and young people interested in IT careers relied on expensive private training courses and internal trainings to compensate for the inadequate public education system.

A related issue was that high-potential young people were not choosing IT as a career because they lacked information on job opportunities and skills requirements and training. School career counsellors, the media and public employment service bureaus did not provide information about opportunities in IT. Youth (and parents) also considered public sector careers to be more reliable and prestigious, and therefore, preferred studying law, economics and political science. For young women, there was the additional hurdle of IT jobs being considered a male domain.

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15 Interviews with software companies.

3.2. Markets

BiH's economy is small, fragmented and offers limited scope to IT firms. This means, most growth opportunities come from international markets. Despite the abundance of outsourcing opportunities internationally, only an estimated 10 percent of locally oriented firms were successful at entering these markets,[16] and even these believed they were not able to make full use of the opportunities.

A key issue was that firms lacked information on international markets – who the players were, what their requirements were, and what standards had to be met. Branding of the sector was also a problem, with neither Sarajevo nor BiH considered an "IT destination", and there was no strategy in place to market or promote the sector. The root cause of both problems was the lack of effective, IT specific public or private institutions that could help individual firms link with potential clients, or grow the country's reputation as a high quality IT outsourcing destination.

The small size of BiH's IT firms was another constraint, since businesses from international clients often require hundreds of professional staff rather than the dozens the largest BiH IT firms can offer. Companies simply do not have the scale that larger countries with more developed IT sectors and higher quality IT education (e.g. Bulgaria or Romania) can provide. One solution to this problem is for firms to jointly bid on and deliver large projects, but this was not happening because IT firms did not trust each other sufficiently and saw each other as competitors in the struggle for skilled workers.

SYMPTOMS

Which market systems

› IT: highly relevant; employing 20,000 people, 60% young people; more attractive to youth than many other sectors

› Initial investment costs are low and the number of companies increasing

› Improvements feasible

› Potential for gender mainstreaming: 40% of IT workers were women

How the system is not working

› Shortage of qualified staff in IT: IT firms found graduates' skills to be out-dated, too incomplete and too academic

› BiH's small economy & limited scope to IT firms: only an estimated 10% locally oriented firms were successful at entering international markets

› Unconducive regulatory & policy environment: lack of laws like on e-signature & e-business, or establishing an agency to implement the strategy

Why

ROOT CAUSES

› Lack of adequate/relevant information & support about IT opportunities; lack of or weak support system (marketing, linkages); and weak advocacy support system
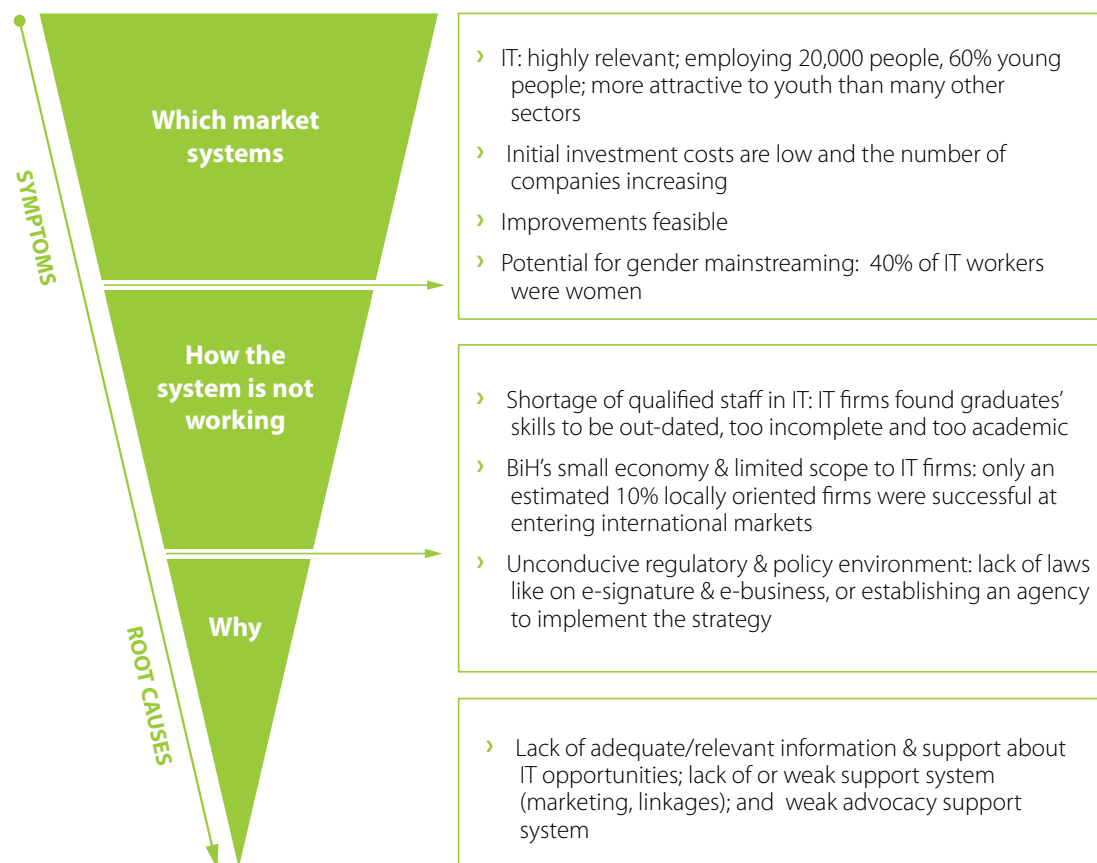
Figure 1: symptoms and root causes

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16   Estimate based on interviews with software companies.

3.3. Regulatory and policy environment

Policy, strategy, and action plans to develop an "information society" were developed in 2004 and approved by the Council of Ministers of BiH.[17] This strategy did not lead to significant change, with measures such as adopting laws on e-signature and e-business, or establishing an agency to implement the strategy left unimplemented. As a result, in the *2012 Global IT Report* BiH ranked 108 out of 142 countries on the *Political and Regulatory Environment* index.[18] The country's ranking on *Government Usage*, which includes prioritisation and importance to the government's development vision, was an even more dismal 123 out of 142[19].

The general institutional weakness and political instability in BiH have a negative impact on the IT sector; however, wide-ranging reforms to economic governance or a political settlement are clearly beyond the scope of a mid-sized development project. IT-focused reforms in education, economic policy or local infrastructure by lower levels of government[20] were possible, and could have an important impact on the IT sector, but these also were not happening.

Further investigation by the project found that a lack of government support for IT at the entity and cantonal level was linked to the sector's low visibility.[21] IT was not policy makers' radar and its current significance and future potential were not recognised. Individual firms had no confidence in the government's interest or capacity to improve the regulatory and policy environment and avoided contact with officials and politicians. With collective effort, players in the sector could hope to change government perceptions and influence policy, but distrust and the lack of a common voice meant that industry representatives did not approach government to advocate for reform. Effective public-private dialogue leading to policy changes would require new mechanisms for coordination and advocacy within the IT sector.

Summary of key constraints of the IT sector in BiH

→ *The growth of the sector was inhibited by an acute shortage of qualified staff, mainly due to the gap between outdated education curricula and rapidly evolving requirements of employers. School career counsellors, the media and public employment service bureaus did not provide information about opportunities in IT. With a limited supply of workers, firms struggling to grow headhunted each other's employees, causing distrust and divisions between companies.*

→ *BiH has a small economy with limited scope for IT firms even though there were growth opportunities in international markets. The core problem was the limited access to market information or linkage due to weak consultancy services as well as lack of support by Government institutions. Firms in BiH could not collectively access large contracts proposed by international clients, as they did not relate to each other in a situation of lack of trust.*

→ *IT was not on policy makers' radar and its significance was not recognised due to lack of an effective strategy promoting the country as an "IT destination". Firms lacked coordination and communication due to weak capacity to advocate towards BiH's Government institutions.*

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17   The Council of Ministers is the executive body of the state of Bosnia and Herzegovina, with strictly defined powers.

18   The Global Information Technology Report 2012, Bosnia and Herzegovina, World Economic Forum, http://www3.weforum.org/docs/GITR/2012/BosniaandHerzegovina.pdf, 2012.

19   Ibid

20   Entities (Republika Srpska and the Federation of Bosnia and Herzegovina) and cantons (in the federation) have wide powers over economic policy, education and other areas relevant to the IT sector and can sometimes be influenced to attempt reforms that are difficult at the state level.

21   Bosnia and Herzegovina is divided into two 'entities,' the Federation of BiH (the Federation) and the Republika Srpska (RS). A third, smaller area, the Brčko District, operates under a separate administration. The Federation is further divided into ten cantons, each with its own government and responsibilities. Each entity also has municipalities for a total of 143 municipalities in BiH (63 in the RS and 80 in the Federation.)

04

Strategy and vision

The vision of the MarketMakers project for the IT sector in BiH was an adequate/relevant system for information about IT opportunities, marketing/linkages and advocacy, creating more high-quality jobs for young women and men. This will particularly be possible due to greater penetration of international markets. New marketing services, high-level, market driven education and training of IT professionals and a facilitative regulatory and policy environment are the key success factors. Young women and men will be aware of the career opportunities in the IT sector and will choose to be educated and trained to make use of them. The IT sector will have a capacity for collaboration, exchange of experience and knowledge, joint action and advocacy that will promote and facilitate these changes. The public sector will be its dialogue partner and will establish and uphold key changes within its own sphere. Figure 2 shows the strategic framework of the IT sector as facilitated by the MarketMakers project.

The Marketmakers project could have attempted to tackle each of the IT sector's constraints directly, for example, by doing a regulatory impact assessment and promoting improvement, hiring consultants to draft strategies and update curricula, or contributing funding to a government IT agency. These interventions would have required substantial human and financial resources which the project did not have. Even if successful, this type of intervention could lead to important one-time gains, but it is likely that the process of change would have stopped when the project ended.

For MarketMakers, the key to success was enabling private and public actors to re-imagine what they did and how they did it. Given the difficult institutional and governance situation in BiH, using government or the formal education system as the entry point for meaningful change would have been extremely slow and difficult. The project had very strong contacts with IT firms and it used these firms to stimulate improved IT market system changes that they can benefit greatly from. The firms had a flexibility and will to drive improvement in a number of the key constraints to their growth. Specifically, changes in organisation and collaboration between companies would lead to:

→ Joint activities to attract more clients and bigger projects, increasing sales.

→ The sector's engagement in public-private dialogue to improve the business environment, leading to increased investment in the sector.

→ The emergence of market-driven training and other business services, led by the IT sector itself, to increase IT firms' access to qualified IT professionals and to stimulate more start-ups.

→ The IT sector promoting IT as a career to attract more young women and men into IT education, training and careers, thereby increasing the availability of IT professionals.

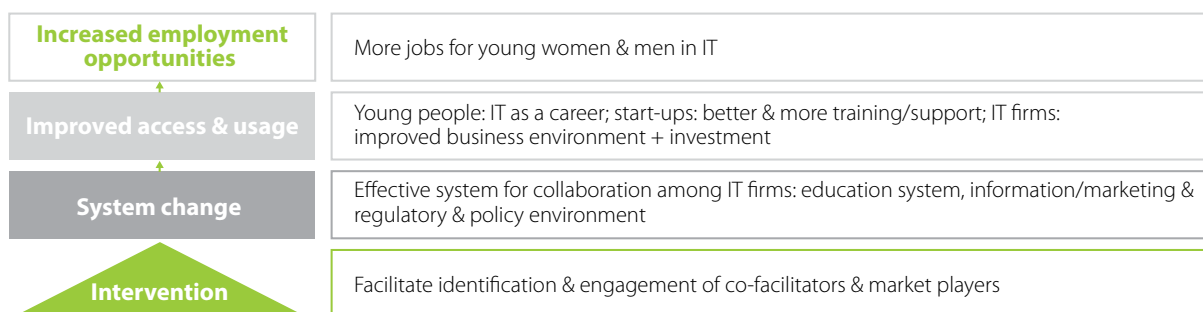| Increased employment opportunities	More jobs for young women & men in IT
Improved access & usage	Young people: IT as a career; start-ups: better & more training/support; IT firms: improved business environment + investment
System change	Effective system for collaboration among IT firms: education system, information/marketing & regulatory & policy environment
Intervention	Facilitate identification & engagement of co-facilitators & market players

Figure 2: Strategic framework of the IT sector

Box 1: What is a market system and what is systemic change?

A market system is an interaction with an exchange at its heart. In the case of employment in the IT sector, the exchange is between IT companies as employers (demand for labour) and IT workers as employees (supply of labour). These exchanges are governed by *rules* including legislation, regulations, norms and values, and supported by *functions* such as training, infrastructure or financial services. When certain rules or functions do not operate well, a market system *constraint* is created that reduces the effectiveness of the system and harms the people involved in the transaction.

Positive systemic change takes place when there is a lasting improvement in one or more market system constraints. Systemic change addresses the underlying causes of poor growth, rather than the symptoms. These underlying causes are discovered by asking why market players have not addressed such constraints themselves. Key characteristics of a systemic change are:

→ Sustainability- market players will continue the innovations.

→ Scalability- successful innovations either affect the majority of players in a market system or will be taken up by more market players.

→ Resilience- when the market system or the wider environment (e.g. global markets) change, market players are able to adapt.

Summary of strategy and vision

→ *By the time MarketMakers' research was finished, the project team had identified and prioritised the issues slowing growth in the IT sector, and they had a vision for a dynamic, fast-growing and resilient IT sector to address youth unemployment in BiH.*

→ *The vision of the IT sector was the availability of an adequate/relevant system for information about IT opportunities, marketing/linkages and advocacy, creating more high-quality jobs for young women and men.*

→ *While the project team knew what they wanted to achieve, the team needed mechanisms or "business models" to overcome the mistrust among firms and enable their collaboration. To be sustainable, this mechanism needed to be owned and led by IT companies themselves, so suitable partners had to be identified.*

→ *The key issues with the IT firms were distrust and a lack of a shared vision, which hampered collective action needed to unlock faster growth. The project had very strong contacts which it used as an entry to stimulate changes in organisation and collaboration between companies.*

05

Facilitative action

MarketMakers' transition from analysis to implementation and partner oriented facilitative action began by selecting potential partners, trading initial ideas on how to cooperate with these partners, and then initiating the process of elaborating business plans and cooperation modalities with the partners (a primarily facilitative process).

In May 2013 the project started meeting leading firms to identify market players who recognised the benefits of collaboration, and who had ideas about how to bring it about. Establishing a technology park emerged as an option favoured by some. Others felt a more formal way of working together, like an association, would serve their purposes better. Neither idea crystallised into something concrete at this point.

5.1. Partnerships

The project engaged two key players: HUB387 and BIT Alliance. The project played an instrumental role in bringing these two players into being. The main focus was not HUB387 and BIT Alliance themselves, but improvement of the education system for a qualified workforce, an effective strategy for promotion of the IT sector, and a support system for influencing regulatory and policy environment.

Partnership with HUB 387

MarketMakers kept the conversation going until September 2013 when it started discussions with Mr Edin Saracevic, a successful IT entrepreneur based in the US. He had returned to Bosnia because he was, in his words, "concerned about the brain drain of many talented young people from Sarajevo". He shared many of the same observations about the IT sector, and MarketMakers also saw collaboration among firms as the key to further growth. His own vision for changing was to create an IT hub similar to those he had seen in the US and Europe. This hub would be a vibrant "open community" of dynamic IT firms and freelancers, sharing a location, knowledge and ideas, collaborating and collectively addressing the issues facing the sector.

> **Box 2: Using key players in the IT sector as entry**
>
> **HUB387:** is an IT hub with the mission to build a vibrant IT community in BiH. By sharing a common space, HUB387 seeks to promote a culture of collaboration and knowledge sharing among IT companies, propelling BiH to the forefront of IT development in the region. To address the skills gap in the IT sector, HUB387 proposed the creation of Academy387 which offers intensive educational programs and courses, specifically addressing skills relevant to IT companies
>
> **BIT Alliance:** is an IT focused business membership organisation, formed by six like-minded software companies. BIT Alliance has three main objectives: increasing the supply of skilled IT workers, conducting advocacy on regulatory issues slowing the growth of the IT sector, and promoting BiH as a vibrant IT destination

Mr. Saracevic's model fit into MarketMakers' vision of the future market system and was close to the technology park idea that other industry players hoped for. While Mr Saracevic had already presented his idea to development agencies and IT firms, the concept was not well enough developed or trusted by other firms to succeed on its own. This left a role for MarketMakers, which, Mr Saracevic states, "understood the concept from the get-go". Initially three firms joined Mr Saracevic in the establishment of the HUB387 as an informal, co-located cluster of IT firms.

Partnership with BIT Alliance

When the IT hub model was discussed with potential members, it became clear that firms favouring a formal organisation were not interested in joining. A group of six firms, under the leadership of Mr Damir Ibrisimovic, instead decided to set up a formal association called BIT Alliance. The association's goal was to turn BiH into a top-ranked IT destination, with an initial focus on improving the supply of high-level professionals.

Like with HUB 387, the model proposed by the six firms led by Mr. Ibrasimivic fit with MarketMakers' vision of the future. While HUB 387 and BIT Alliance seemed, on their surface, to be competing initiatives setting up parallel structures, MarketMakers saw adequate space for both and hoped that they would learn to work together productively.

5.2. Facilitation

For MarketMakers, facilitation aims at change that lasts beyond the project's duration, which is also referred to as sustainability. The project team were aware of, from the start, the key to successful facilitation would be to build on public and private sector market players' interests and incentives to do things differently. Typical interests and incentives include increasing profits, fulfilling a ministry's legislated mandate better or achieving public recognition.

Box 3: Elements of facilitative action

To achieve lasting change a facilitator:

→   Does not take on functions market players should fulfil. For instance, facilitators do not normally advocate for regulatory change themselves, as this is the function of civil society and private sector organisations.

→   Supports market players to innovate and improve their existing roles or take on new roles. Often this means supporting new "business models" that address unmet needs in the market system while making good business sense for those who take up the new models.

→   Provides funding only to share the initial risks of innovation or to trigger a desired behaviour. Once success has been demonstrated, market players should continue the innovation themselves without inputs from the facilitator.

5.2.1. The Facilitation Process and HUB 387

With HUB387 things moved quickly, starting with signing of Memorandum of Understanding (MoU) on cooperation with HUB387 in November 2013. This set out the terms of the relationship and responsibilities of MarketMakers and Mr Saracevic and HUB 387 member companies. Importantly, the MoU was an agreement between business partners rather than a contribution by a donor to recipient "beneficiaries".

As a second step, the project joined negotiations for space between Mr. Saracevic and management of a disused commercial complex, Bosmal City Centre, which resulted in a favourable rent. This enabled the Hub 387 to become operational in January 2014, starting with three IT companies that had been convinced to join, followed by a formal opening in February 2014.

Box 4: What made the relationship facilitative?

→   Moving quickly, adapting the project's processes to the norm of the IT sector

→   Setting up a business partnership instead of a typical donor-beneficiary relationship

→   Providing negotiation support for the crucial agreement with the future landlord.

→   Helping HUB 387 gain credibility with companies, the landlord and other donors

→   Supporting creation of a business plan that clarified the organisations' founding goals, principles and operations

→   Only investing a small amount of money for a promotional discount on rent to attract the first companies to HUB 387

MarketMakers' only financial support was a temporary rental subsidy to partly compensate the moving costs of companies joining HUB 387. The subsidy was paid directly to the landlords over 18 months, starting at 30% of monthly rent and reducing to 15% once half of MarketMakers' total contribution of BAM 100,000 had been spent. This compares to BAM 500,000 initially invested by Hub members.[22]

Early in the process, MarketMakers also supported Mr Saracevic to develop a business case for the HUB 387, which was completed in January 2014. This provided more clarity about the IT hub concept and its objectives, which was useful for promotion and as a strategic framework for future development. In line with the original concept, the Hub was conceived as an open community, not an organisation or business. It does not have an owner, Board, Director, governance structure or budget, though members do meet quarterly to exchange information on their own activities and general management decisions are taken by Mr. Saracevic.

NEST71 as well as the HUB Academy were to be independent firms within the Hub and these firms were set up and are owned by Mr Saracevic and his business partners. NEST71 was the fourth firm to join the Hub, in February while the Academy became operational in June.

Over the remainder of 2014, MarketMakers supported the growth of HUB 387 by advising on the development and implementation of a promotional plan and linking Mr Saracevic to promising firms the project had identified during its research. Promotion was funded by Mr Saracevic and included events at HUB 387, presentations in seminars, workshops, conferences, job fairs, and individual meetings with firms. MarketMakers and Mr Saracevic selected new members together focusing on "innovative firms that create added value". By September there were 9 member companies, and nearly all available space had been occupied. By the end of 2015 all space was occupied, including in NEST 71, and companies were starting to spill over to other parts of the Bosmal complex.

5.2.2. Facilitation process and BIT Alliance

Agreement by six IT firms to establish BIT Alliance came in October 2013 but official registration, supported by MarketMakers, was only completed in August 2014. The Alliance is a formal organisation, with a Governing Board made up of the founders, a President and a salaried Executive Director. MarketMakers' assistance was based on a contract which formalised its advisory role by making it a non-voting associate member of the Board for 18 months. MarketMakers' financial contribution was the same 1,000 Bosnian Mark (BAM)[23] per month fee as the other members, equalling 18,000 BAM of the total 124,000 BAM in membership fees paid in that period.

While membership fees were appreciated, MarketMakers' advice and support while BIT Alliance developed its first business plan was equally, if not more, valuable. This plan is even more wide-ranging than HUB 387's, with objectives such as developing an information society and the market economy, and advocating with government for better regulation, policies and programmes on behalf of members. The plan proposed a phased approach, with an initial focus on the key issue of training new software developers to make up for the inadequate numbers graduating from the public education system.

Like HUB 387, BIT Alliance's business plan addressed key constraints on sector growth identified by MarketMakers. The first BIT Camp started in September 2014 and was into a second phase by mid-2015. By this time BIT Alliance was also cooperating with regional and international IT organisations to develop an outsourcing strategy for the Western Balkans and was representing it member companies and the BiH IT sector at international marketing events.

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22   Companies in HUB 387 have been continuing to invest heavily since that time.

23   1 BAM = 0.57 US Dollar

Table 1: key points the partnerships

HUB 387 Business Case	BIT Alliance Business Plan
→ Goal: To make BiH a respected IT destination, generate more jobs for young people, and limit high levels of brain-drain	→ Goal: Recognition of BiH as a destination where top IT experts work
→ Supporting companies to work together and gain a critical mass and bring in larger, high-value contracts	→ Creating BIT Camp, an intensive, 6 month, entry level education and mentoring programme to teach software engineering to high-potential non-experts, increasing the supply of qualified professionals.
→ International marketing through personal networks and the diaspora helps bring in new projects	→ Comprehensive marketing of the BIT Camp and IT as a top profession to parents and students at high schools, and universities.
→ Knowledge and skills increase through sharing and exchange within the hub, events, global networking, Academy 387 providing intensive courses, and member companies offering internships	→ Outreach to attract young women into the sector, who are perceived to be less likely to leaving for jobs abroad once trained.
→ Promoting IT as a top career brings more young people into the sector	
→ NEST71 functions as an incubator and a co-working space for freelancers	
→ International partnerships with venture capital funds supports further investment in the sector, including start-ups	

5.3. The contribution of MarketMakers and other projects

While neither HUB 387 nor BIT Alliance existed prior to MarketMakers' involvement, the ideas behind them had been circulating for some time. Mr. Saracevic had been promoting his idea for HUB 387 to donors for a period of months, and BIT Alliance was preceded by an organisation called BYTE which included hardware and software companies, but which collapsed due to a lack of cohesion.

The two organisations are now operating and successful, and it is very difficult to say if either initiative would have happened in the absence of MarketMakers. When asked about the role of MarketMakers, many of those involved gave very different responses, and people had different views on what support had been important. The key player was Mr Saracevic, who considers MarketMakers' contribution to have been "critical".

In its partnership with HUB 387, MarketMakers' most obvious support was the rent incentive to lure the first group of companies into Bosmal. Less obviously, but equally important, the project instilled confidence and credibility in the initiative after it was rejected by others. Clarifying the concept through a business case also helped get members on board. A conservative assessment can conclude that the project was critical to the Hub's establishment at this time, although something similar may have happened eventually.

At BIT Alliance, firms knew what they wanted but were unclear how to achieve their goals. By developing a business case, establishing priorities (training), registering, setting up a structure, and encouraging companies to select a Director, MarketMakers made significant contributions. Its presence also helped overcome mistrust among members, some of which stemmed from failure of the defunct BYTE association.

Either or both of HUB 387 and BIT Alliance may have happened independently. Yet the first and clearest contribution of the project was to catalyse processes that may[24] have happened without it. This is an important result in the fast-moving IT world and in a context where each year more young women and men despair of finding a job in their own country.

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[24]   Or may not

The second contribution made by MarketMakers is more subtle. MarketMakers' facilitative approach was different from other donors such as SIDA and USAID. Both of these organisations eventually committed large amounts funding to Academy 387 and NEST 71, which aim at self-financing. This enabled Academy 387 to expand rapidly and offer low-cost training fees, and gives NEST 71 money to support the launch of more start-ups. Both of these aims are worthy, but the support may undermine the sustainability of the two organisations. Had HUB 387 and BIT Alliance originally partnered with more donors through direct support, their founding business models may have been less sustainable and more dependent on donor funding.

Through its facilitation, MarketMakers quietly shaped how its partners' ideas were put into practice. MarketMakers' influence on partners' own ideas and ways of working was modest and aimed primarily at ensuring the viability of their business models. In this sense, MarketMakers' commitment to a facilitative approach has contributed to the overall success of both organisations.

Summary of facilitative action

→ The key consideration in the facilitation of the project was to build on public and private sector market players' interests and incentives to do things differently.

→ As a facilitator, MarketMakers assisted market actors in the IT sector to achieve their goals in new ways. The main focus was not the main players like HUB387 and BIT Alliance themselves, but improvement of the education system for a qualified workforce, an effective strategy for promotion of the IT sector, and a support system for influencing regulatory and policy environment.

→ MarketMakers gave emphasis to setting up a business partnership instead of a typical donor-beneficiary relationship.

→ Providing initial and limited financial support was aimed at minimising risks and stimulating engagement through instilling confidence and credibility in the initiative, and shaping partners' ideas to put them into practice (e.g. crystallisation of the ideas and establishment of trust).

06

Results

The previous sections discussed how HUB 387 and BIT Alliance were established with MarketMakers' facilitation, and what contributions the project has made. Since their establishment, the two organisations have driven changes in the three key areas of training, public-private dialogue and increased trust between companies. Without these organisations, these changes would not have taken place. The main focus of this section is to review important and fundamental changes that go beyond the two key market actors. The discussion looks into whether the changes that have taken place are large-scale and durable.

Through its activities in the IT sector with HUB 387 and BIT Alliance, MarketMakers has achieved its desired results in both expected and unexpected ways. As shown in the preceding chapters, the new business models supported by the project led to improved performance of the market system in ways that were more or less anticipated by the project and their partners as activities were being planned. In other cases, such as more supportive government policies for the IT sector and increased interest of young women and men in IT education and careers, results emerged from government and social response to the original business models. While these changes were hoped for, the way they were achieved was not initially anticipated.

6.1. Meeting labour demands through better skills

Training and new internship programs have led directly to more young women and men being placed in IT jobs. This success, supported by promotion activities, is leading to greater awareness of IT as a career choice and a greater number of students choosing IT education.

As a result of the establishment of HUB 387 and BIT Alliance, more opportunities to obtain IT skills have become available. Academy 387 offers courses to upgrade the skills of IT professionals and to help university graduates bridge the gap between their theoretical knowledge and the practical requirements of IT companies. It ensures relevance by consulting with firms and by allowing IT experts and others to propose and promote courses that advertised online and which run when sufficient students sign on. Academy 387 also plans to have courses run fully by HUB 387 firms and some have committed themselves and is piloting online delivery of IT courses.

The BIT Alliance's BIT Camps are based on the needs of the Alliance members for entry-level programmers, with curricula developed specifically for this purpose. This model selects high-potential individuals, specifically targeting young women and men with no previous IT training or experience. By bringing young women and men into IT from outside the sector, BIT Alliance hopes to increase the total supply of IT workers in the job-market.

In addition to training, internships are increasingly offered by BIT Alliance and HUB 387 companies, and are usually geared specifically to company needs. Internships have proved to be one of the most successful ways of bringing new workers into the IT sector. The table in Annex I summarises the relative contributions of the two training programs and internships, based on information provided by the Academy 387, BIT Alliance, and a tracer study of a representative sample of Academy graduates.

It is plausible to conclude that the training and internship programs started by HUB 387 and BIT Alliance contribute to more well-qualified IT professionals entering the labour market and more (mostly young) women and men

taking IT jobs. Using fairly conservative assumptions this has led to 198 women and men working as software developers and testers,[25] all high quality jobs with secure and salaries that are among the highest in the country.

In addition, several companies stated that they were able to take on projects because they were able to hire the newly trained professionals. Training has therefore contributed to higher sales, growth of the enterprises, and new job opportunities. This change in the market system is therefore already showing a clear and significant direct impacts on employment and sector growth.

The direct effects of HUB 387 and BIT Alliance's training and internship programs are increasingly supplemented by indirect impacts. According to directors of IT and electrical engineering faculties at one public and two private universities, the demand for IT courses (as shown by numbers of students) has increased over the past year and they linked this to the influence of the two new IT organisations.[26] Similarly, focus group discussions with students at two technical schools and four gymnasia showed an overall positive attitude to IT careers. Students claimed this has developed over the past 3 to 5 years, mostly due to people seeing positive examples in their surroundings. Though few remembered hearing of HUB 387 or BIT Alliance, they did see increased IT coverage in the media as a contributing factor.

At companies outside HUB 387 and BIT Alliance[27] interviewed for this paper, two felt there had been significant progress improving young people's attitudes to the IT sector. Four linked the Hub and the Alliance to an improved perception more generally, while five noted increased coverage of the IT sector in the media.

While a changed perception of the sector cannot be solely attributed to MarketMakers' partners, available evidence suggests that they have contributed to this change through their savvy use of media. This is already contributing to more young women and men applying for or enrolling in IT courses, and will therefore contribute to more IT professionals on the labour market when these new students complete their training. However, the employability of these graduates will depend on the quality of the education they have chosen, which is a recognised problem in the public education system of Bosnia and Herzegovina.

6.2. Improved public-private dialogue

Dialogue has led to initial steps to improve the business environment, which should result in more investment and more job opportunities, however this will only happen on a relatively long timescale.

MarketMakers' facilitation resulted in HUB 387's inclusion in the Cantonal Committee for Development of Canton Sarajevo, which is drafting the 2014-2020 Cantonal Development Strategy.[28] SERDA, as a member of the committee, was in a good position to advocate for the importance of the IT sector, using the project's research findings. HUB 387's participation was also strongly supported by the canton's Prime Minister, who was impressed by an event he attended at the hub. Intensive work on the development strategy had started in April under the Development Planning Institute of the Canton Sarajevo, which will submit the document for approval by the end of 2015. According the current draft, ICT will be one of three priority sectors selected for development, a large improvement from not having been a priority at all.

Key findings of the IT market system analysis were integrated into the strategy, and fifteen proposals for concrete programmes have been drafted with inputs from HUB 387 member companies. Some are based on HUB 387-initiated discussions with representatives of other sectors such as tourism and education. The Committee also accepted proposals from BIT Alliance though it is not itself a member of the committee, and five additional proposals were duly submitted.[29]

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25   According to the surveyed IT companies, 10 software developers create 1 non-IT related job in their companies. The project therefore estimates that in addition to the software developers and testers, 20 more jobs in supporting functions such as accounting, marketing and management have been generated. Moreover, the project is currently in the process of estimating the job multiplier for the IT sector in BiH, which will provide insight into the number of induced jobs generated through the intervention.

26   The number applicants to the Faculty for Electrical Engineering in the Department of Computer Science and Informatics at the University of Sarajevo increased by 150% from 2013 to 2015.

27   15 companies outside of HUB 387 and BIT Alliance were interviewed for this study.

28   HUB 387 has been acting in this role since June 2015 as the canton renewed efforts to complete this much delayed strategy document.

29   Since collection of data for this paper, the new strategy has been approved by the legislative assembly of Canton Sarajevo.

HUB 387 also opened discussions with the municipality of Stari Grad[30] to obtain land for a technological park which would replace the Bosmal centre which HUB 387 has outgrown. This has been unofficially agreed, although several additional steps are needed before construction can begin. Separately, BIT Alliance in collaboration with another organisation has been talking to Centar[31] municipality for the same purpose, and land has been allocated. While advocacy is not yet a top priority of BIT Alliance, the association and its members have developed contacts with individual officials and politicians. Alliance members are also taking part in a dialogue initiative led by the American Chamber of Commerce, which has been asked by the Prime Minister of the Federation to propose five priorities for the development of the IT sector.

Given that no proposals have led to concrete results yet, it is fair to conclude that these dialogue initiatives have not yet contributed to a better business environment or more investment. Given the stately pace of BiH government and bureaucracy, is unrealistic to expect this to happen in such a short period of time. Despite this, it is reasonable to expect that results after cantonal government funds have been officially approved and new education, infrastructure and other initiatives take place.

That collective public-private dialogue is happening at all where mistrust and absence of relations existed just two years ago is rightly considered a major achievement by those involved and an improvement in the business environment in its own right. Declaration of IT as a priority economic sector by Government is a key step forward which Mr Saracevic calls this the Hub's biggest achievement, though some companies still doubt whether it will really make a difference.

The change in perception of the IT sector in government and new trust between government and the private sector may have the strongest impact on the business environment in the long run. Most, though not all, companies inside and outside HUB 387 and BIT Alliance agree that a small shift has taken place, though more is needed. Most companies inside and outside the two organisations believe that the HUB 387 and BIT Alliance have influenced this change. Government officials also attest to this, with the Prime Minister stating that there has been a clear change in perception of the sector in Government over the past few years, partly due to contacts with individual companies and HUB 387. This is a change in the informal norms and values that are a seldom recognised but extremely important part of the business environment. In the long run, this informal change may get more young women and men into IT jobs than the more obvious direct benefits that HUB 387 and BIT Alliance provide to member companies.

6.3. Increased Trust and Collaboration Between Companies

Trust and interaction among companies has increased, but this has not yet led to significant numbers of larger or joint projects. It remains to be seen if more joint projects will emerge in the future, but increased trust and interaction created an environment where entrepreneurship and innovation are valued, encouraging small companies and start-ups to grow more aggressively.

While companies are not yet delivering many new, large projects together, owners and managers agree that part of the explanation is time. Both BIT Alliance and HUB 387 are still very young, and it takes time to establish the necessary trust and working relationships, attract new clients and win bids. They agree, though, that this process is well underway, with some of the firms in the Alliance stating that there is sufficient trust now so seek joint projects.

> **Box5: Key Results of Survey on Trust at HUB 387**
>
> → The majority of employees meet staff of other firms several times a week, and about half do so more often than a year ago.
>
> → The majority also participate in events organised at Academy 387.
>
> → Nearly all have received help or advice from staff of other firms, with about half thinking this has increased over the past year and that it is more compared to firms outside the HUB 387.
>
> → Nearly all say the working atmosphere is better due to the HUB 387.
>
> → The number of staff who view other companies in HUB 387 as colleagues or partners rather than competitors has increased, a view that is less common for companies outside the hub.

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30   Located in the old-town area of Sarajevo.
31   The municipality located in the central part of the city of Sarajevo.

More than half say trust is strong enough for joint projects to be possible, but for a variety of reasons the scope and incentives for joint projects may be limited even if the basis for achieving it has been laid in terms of improved relationships and trust. It is also likely that firms grew by obtaining more projects through their expanded network, which some reported was the case. These are important results. Overall, though, the findings indicate that it is too early to expect a significant contribution to enterprise growth and employment as a result of shared projects.

Creation of an environment supportive of risk taking and innovation and young people's improved perception of IT may be contributing to more people taking the risk of starting an IT business. Demonstrating this conclusively would require extensive research with recent start-ups which was beyond the scope of this study. However, NEST 71 offers a suite of services to support those who choose to start new companies, including ready-made and serviced working space, mentoring by successful IT entrepreneurs, linkages to service providers such as lawyers, and links to funds and markets, mostly through Mr. Saracevic and his business partners.

Currently there are 7 start-ups in NEST 71, nine other small companies and one previous tenant that began as a start-up but graduated into HUB 387 proper in March 2015. These companies have been remarkably successful, with a number achieving very high rates of revenue and employment growth. In interviews, the management of these companies attributed part of their success to the support provided by NEST 71 and to the benefits of locating their business in HUB 387.

6.4.   Are the changes systemic?

There are multiple definitions of a "systemic change". One of the most useful definitions is a change that is sustainable (it lasts beyond the duration of project activities), at scale (it is widespread and/or continues to grow and spread on its own) and resilient (it does not fall apart under reasonably foreseeable stresses). For changes to be truly systemic, they should meet all three of these criteria.

6.4.1.   Sustainability

On balance, the sustainability of both HUB 387 and BIT Alliance as individual organisations is reasonably secure, although not absolutely certain. As a "community", HUB 387 has very few cash costs, while BIT Alliance's membership fees ensure enough revenue for core operations. Both are instigating important changes in the ICT sector and these changes create meaningful benefits for member companies which should ensure the continued success of both organisations.

While the fundamental conditions for sustainability are good for both organisations, they also face challenges. A key issue is the financial sustainability of the HUB 387's spin-off training initiative Academy 387 and BIT Alliance's flagship BIT Camp intervention, both of which were heavily subsidised by other donors. HUB 387 and BIT Alliance also experience internal disagreement about the future direction of their organisations or governance[32] and both have some members that are not completely satisfied with the services they receive. These issues pose some risk to the continued success of both organisations.

At present MarketMakers' support is very minimal, limited to linking the two partners to other market players and providing occasional informal advice. This indicates that both organisations are sufficiently well-established and successful to continue without MarketMakers support. To be totally sure of their sustainability, MarketMakers could consider staying involved at a low level and helping address some of these weaknesses.

6.4.2.   Scale

HUB 387 and BIT Alliance themselves are relatively small in scale, and in most cases their direct impacts are as well. MarketMakers' strategy for reaching scale is to: a) facilitate replication of BIT Alliance and HUB 387, b) facilitate replication of some of the things these organisations do, or c) to encourage their organic growth.

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32   Mostly in the case of HUB 387

Some growth is already taking place, and MarketMakers has been facilitating this growth by linking both bodies to potential members. In the case of the HUB 387 growth through addition of new members is currently constrained by the lack of space in Bosmal Centre. If HUB 387 succeeds at establishing a technology park, Mr. Saracevic believes "the building would explode". This will take time, but the potential for scale exists.

The two business models are having an effect on other players, inside and outside BiH, and the process to reach larger-scale impact is underway. HUB 387 has expanded to Zagreb, Croatia as HUB 385[33] and has influenced thinking on similar initiatives in other countries, while BIT Alliance is adding new members inside and outside Sarajevo. This is unusually soon after their establishment less than two years ago.

The most important routes to large scale change are due to HUB 387 and BIT Alliances' ability to shift social perceptions of the IT sector among young women and men, in government, and possibly the in general public. MarketMakers and its partners cannot reasonably attribute these changes to their activities, and these shifts were likely underway already. The Hub and the Alliance are, however, the only IT bodies in BiH that have specifically aimed at accelerating these changes and that have undertaken targeted activities to make them happen.

These activities, coupled with successes increasing the supply of new IT workers, public-private dialogue and creating jobs may catalyse a groundswell that will rapidly raise IT's prominence in social perceptions and eventually the economy. This was not fully foreseen in MarketMakers' vision. This also shows that the mutual trust which is important as a basis for collaboration is subject to a similar effect: the more collaboration results in success, the more collaboration there will be. This confirmed the project's expectations.

6.4.3. Resilience

Given how recent MarketMakers' interventions have been it is difficult to assess the new market system's resilience. One of the changes that is taking place is the saturation of the internal market, and our interviews indicate that many firms outside HUB 387 and BIT Alliance are responding by expanding to export markets, or have plans to do so. This is one reason some would like to join but so far neither HUB 387 nor BIT Alliance has a strategy in place to respond to this. Resilience could be increased if they met this need.

A longer-term expected change is a shift away from outsourcing as the driver of market growth. Outsourcing is currently the main business model of almost all BIT Alliance and HUB 387 members. Interviews indicate that this market is expected to start shrinking in three to five years' time, as labour and other costs in BiH increase and international clients find other, more competitive destinations. One of the owners interviewed, whose firm is based in Scotland and BiH, stated that costs in BiH already are only 20 percent lower. The future of IT in the country may therefore lie in development and marketing of new products, and some firms are attempting to make this difficult shift. While it is natural for companies to focus on opportunities in the outsourcing market as long as they last, if the new market system is to prove resilient they should start preparing for this long-term change.

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33   See https://hub385.com/

Summary of results achieved

→ Two dynamic forums for collaboration in the IT sector are in place, functioning, and show good signs of being sustainable.

→ They have an effect on one of the main constraints on growth, i.e. access to qualified IT professionals, the direct effect of which is that 198 women and men have become software developers and testers. Moreover, 10 engineering jobs translate into 1 non-IT related job (such as sales, marketing, HR, etc.), creating an additional 20 indirect jobs.[33]

→ IT organisations have entered into direct dialogue with the Government of Canton Sarajevo, a first for the IT sector, and positive results on the business environment are highly likely.

→ While results in terms of larger, joint projects are still limited, the basis for attracting these together (trust, exchange of information, collaborative relationships) is in place, and the expanded networks of HUB 387 and BIT Alliance offer have enabled firms to attract more projects individually.

→ Scale in BiH is likely to be achieved by the HUB 387 and BIT Alliance having influence on other initiatives, while in other countries in the region the model is already being replicated.

→ Most significantly, a shift in perceptions of the IT sector among young people, in government, and possibly among the general public has been catalysed and will contribute to more youth choosing an IT career and a better business environment.

34　　IT companies report that 10 IT-jobs generate 1 non-IT related job in supporting functions such as marketing, sales, human resources, etc.

07

Lessons Learned

Being facilitative may appear slow at the start, but in the long-term it leads to faster, cheaper achievement and sustainable results at scale by instigating lasting change in the way a market system operates. The results demonstrate that such facilitation pays off when one finds the right partners, business models that address their incentives, and when one has the credibility that gets partners to accept that large sums of money are not what they need most. As the example of MarketMakers shows, using a facilitative approach can have an impact on job creation even in a context where other donors take a different approach, in a country where accession to the EU is one of the main drivers of change, and in a sector and context quite different from those where this has already been well demonstrated (e.g. in agriculture in lower income countries). IT is dynamic sector, with fast-moving change and companies that have strong ideas and want to act on them rapidly. MarketMakers had to respond to this immediately and flexibly while grounding its facilitation in its vision of how the market system should change.
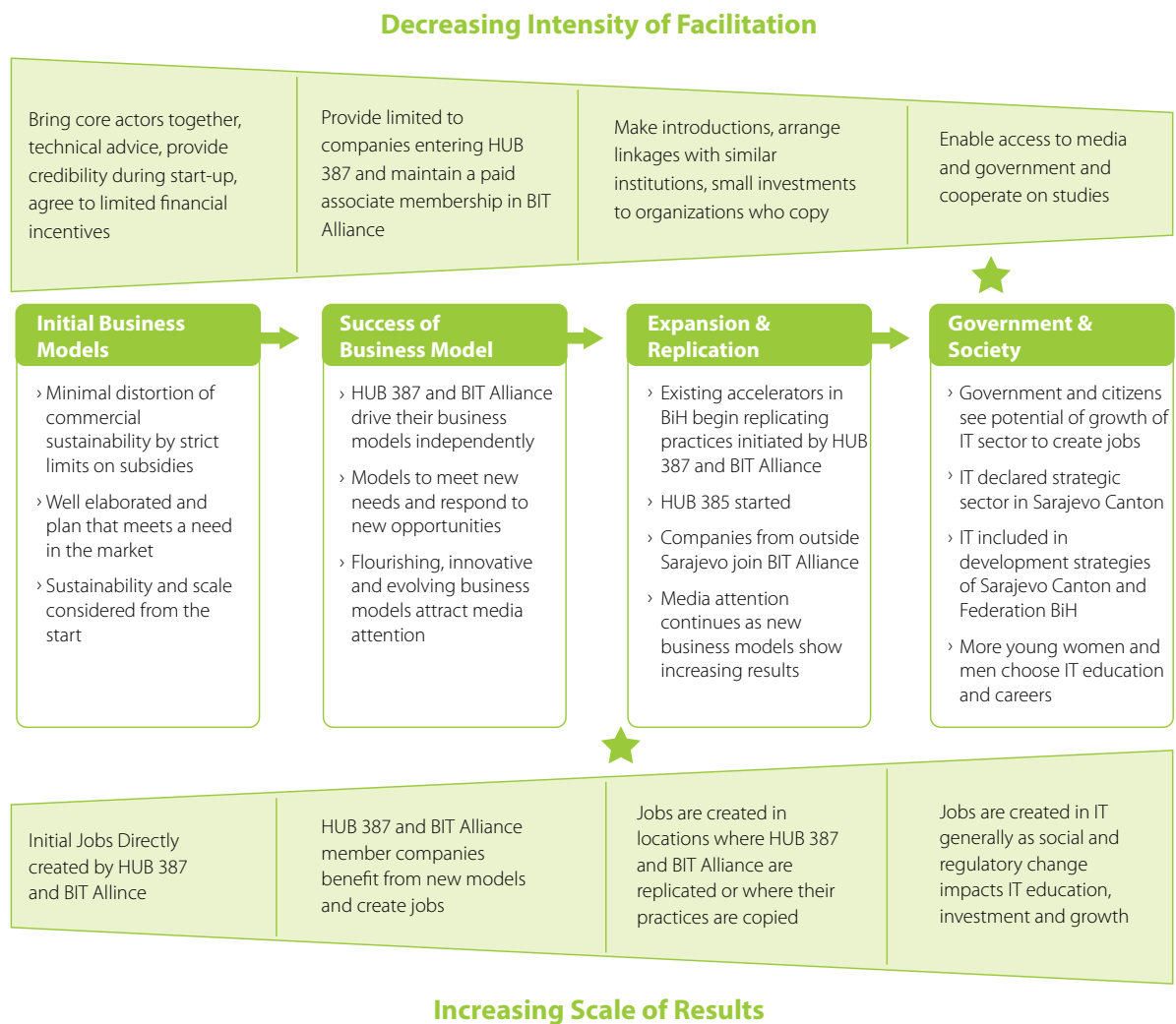
MarketMakers has faithfully stuck to its facilitation role, even when this meant turning down a potential partner, Innovation Centre of Banja Luka (ICBL), because the support it asked for was more than facilitation. Direct financial support to the Hub and the Alliance has been very modest, equalling 135,000 BAM, much less then what was invested by the partners.[35] This compares to the 4 million SIDA is committing to the Academy and NEST 71, both businesses that aim at sustainable self-financing.

While the project provided small amounts of financial support, it put substantial, time, thought and energy into facilitation, including technical advice, networking, and providing credibility to the two nascent organisations. At the time, staff and co-facilitation partners were new to the MSD approach the project applies and saw facilitation as slow, cumbersome, wasteful and frustrating. Some had doubts about working through SERDA as a co-facilitator, felt the analysis was excessive or that developing business plans in cooperation with partners was redundant.

With the benefit of hindsight, the doubts about applying a facilitative approach have now been erased and SERDA staff and the organisation itself now see that a facilitative market systems approach is worth the effort. This is in large part due to the causal link between good facilitation and systemic change. In the experience of MarketMakers, good facilitation leads to well thought out business models which meet a real need in the market, and which are implemented by partners with strong ownership and commitment. Strong business models and partners lead to successful new businesses, which attract the attention of media, government and the general public. It is this attention (or buzz) and MarketMakers response which led to other companies and organisations replicating the concepts promoted by HUB 387 and BIT Alliance. Even more importantly, this attention motivated government to create a more supportive policy environment for IT and encouraged more young women and men to choose IT educations and careers.

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[35]   BAM 500,000 at HUB 387 and BAM 106,000 and growing at BIT Alliance respectively, not including investments stimulated at individual companies

Figure 3: The Path from Facilitation to Response

Decreasing Intensity of Facilitation

| Bring core actors together, technical advice, provide credibility during start-up, agree to limited financial incentives | Provide limited to companies entering HUB 387 and maintain a paid associate membership in BIT Alliance | Make introductions, arrange linkages with similar institutions, small investments to organizations who copy | Enable access to media and government and cooperate on studies |

Initial Business Models	**Success of Business Model**	**Expansion & Replication**	**Government & Society**
› Minimal distortion of commercial sustainability by strict limits on subsidies › Well elaborated and plan that meets a need in the market › Sustainability and scale considered from the start	› HUB 387 and BIT Alliance drive their business models independently › Models to meet new needs and respond to new opportunities › Flourishing, innovative and evolving business models attract media attention	› Existing accelerators in BiH begin replicating practices initiated by HUB 387 and BIT Alliance › HUB 385 started › Companies from outside Sarajevo join BIT Alliance › Media attention continues as new business models show increasing results	› Government and citizens see potential of growth of IT sector to create jobs › IT declared strategic sector in Sarajevo Canton › IT included in development strategies of Sarajevo Canton and Federation BiH › More young women and men choose IT education and careers

| Initial Jobs Directly created by HUB 387 and BIT Allince | HUB 387 and BIT Alliance member companies benefit from new models and create jobs | Jobs are created in locations where HUB 387 and BIT Alliance are replicated or where their practices are copied | Jobs are created in IT generally as social and regulatory change impacts IT education, investment and growth |

Increasing Scale of Results

Note: Red stars indicate the stage of facilitation by the project and the frontier where project impact (jobs) are becoming measureable as of late 2015/early 2016.

While MarketMakers' interventions in the IT sector are a good example of using a facilitative approach, it ran the risk of being a one-off success. Good project design and perseverance helped ensure that the facilitative approach is institutionalised during and after the project through cooperation with Regional Development Agencies (RDAs) as co-facilitators. When RDAs were created, their official role was intended to be facilitation of economic development but in practice they have more often been channels for EU funds and direct service providers.

SERDA's collaboration with MarketMakers has enabled it to make the shift to facilitation. This process started with work on BIT Alliance and HUB 387, but now includes independent action, such as support for development of business models through which municipalities in BiH can invest in IT development. These business models were recently presented to and adopted by the National Government. MarketMakers pushing for the RDAs' role in the project and persevering when the shift took more effort than expected, had the results it aimed at. In other parts of the country it is demonstrating that the same can be achieved with and by other RDAs.

The institutional deepening of the facilitation role, i.e. beyond the RDA staff the project works with, is an aspect that deserves further attention to ensure that this achievement is to become systemic. Early signs are promising, however, as SERDA has[36] begun submitting and winning projects using MSD as a methodology.

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[36]   As of March 2016 SERDA submitted two proposals using MSD methodology and at the time of writing had won one of these projects.

Annex I: Data Collection: 2014 until mid-2015[37]

Provider	Courses	Number trained	Employed
Hub Academy	Short upgrading courses, on IT, sales, languages, tourism; 48 courses till mid-2015; duration 3 to 4 weeks, some 3 to 4 months.	Up to July 2015: 430, 34 % women; by end 2015: 570 Tracer study found 87% trained on IT	60 % were already employed Academy reports that up to July, 73 (17.0 %) found a first or a better job. Ten of these in Hub companies. Tracer study found 8.7 % found a first, 10.5 % found a better job. Of those unemployed 21.7 % found a job. 82.8 % found knowledge gained useful or very useful to their job.
Hub internships	Short in-company courses and on-the-job training on IT, at entry-level; 18 programmes	216 (no disaggregation)	58 (26.9 %) employed
BIT Camps	Two 6-month BIT camps, on IT, entry level (junior developers)	21 graduated from the first camp (3 women) 48 from the second (12 women)	20 employed from first camp; 26 out of 48 graduates from the second BIT camp found employment by December 2015.
Alliance internships	Short in-company courses and on-the-job training on IT, at entry-level	No data	21 employed

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37   Other than the number of jobs created through BIT Camp, all data was collected before the second half of 2015.

∴MarketMakers

CATALYST FOR CHANGE