



MARKET-DRIVEN TRAINING SOLUTIONS LEAD THE WAY

Skills development in Information Technology in Bosnia & Herzegovina

The Information Technology (IT) sector in Bosnia & Herzegovina is one of the fastest-growing economic sectors in the country. Yet various constraints, above all the lack of qualified workers, are preventing it from fulfilling its potential.

The MarketMakers programme, a Swiss government programme implemented by HELVETAS Swiss Intercooperation and Kolektiv D.O.O., promotes the creation of decent employment opportunities in several sectors. In IT, MarketMakers supported the creation of an IT Hub and an industry association to tackle major constraints inhibiting the growth potential of the sector. Two non-formal and entirely industry-driven skills development programmes emerged from these platforms: the BIT Camp and the Academy387. As a result, young people find employment or start their own companies, and IT companies have the workforce they require to expand their business.

BACKGROUND

Bosnia & Herzegovina (BiH) is an upper middle-income country. Globally, the country ranks 79th out of 189 economies for the ease of doing business in 2016. This ranking is explained by high tax burdens and complicated company registration procedures. 28% of all people of working age are unemployed, and the unemployment rate among youths aged 15–24 has been around 60% in recent years.

The Information and Technology (IT) sector is recognised globally as a fast-growing and attractive sector, and the need for IT expertise is growing in BiH. The supply of qualified job candidates has not kept pace with demand, however. The formal education system not only provides outdated technical skills, but also fails to teach the kind of soft skills IT companies are looking for. Furthermore, private training providers mainly deliver in-service training for employees and largely ignore the unemployed as a clientele.

HELVETAS' INTERVENTION IN THE IT

SECTOR

MarketMakers is a project of the Swiss Agency for Development and Cooperation and is implemented by a consortium consisting of HELVETAS Swiss Intercooperation and Kolektiv d.o.o/Posao.ba applying the Market Systems Development approach. The programme seeks to facilitate changes in the market systems in BiH so that young people can benefit from improved employment opportunities. The main foci are on improving the education system, developing an effective strategy to promote the IT sector, and building up a support system for influencing regulatory and policy environment.

A sector analysis revealed that the IT sector is highly relevant to young job seekers. However, the IT sector faces several constraints:

- A lack of information about the IT sector means that job seekers are unaware of career opportunities;
- Outdated curricula, poorly trained teachers unaware of the latest technologies, and insufficient cooperation between training institutes and the private sector yields IT students who do not possess the relevant skills;
- A lack of coordination between IT companies results in ineffective advocacy initiatives in the sector.

MarketMakers used these constraints as an entry point and chose HUB387, an IT Hub, and BIT Alliance, an industry association, as its first two interventions by providing support such as business planning or small seed money.



Shared office space located within HUB387.

TWO INNOVATIVE IT SKILLS

DEVELOPMENT PROGRAMMES

BIT Camp is an intensive six-month skills development programme organised by BIT Alliance to train software developers. The six member companies are heavily involved in the training. Company representatives develop curricula in cooperation with the International University of Sarajevo; they also teach and partly finance the programme through monthly membership levies and a fee for each BIT Camp graduate employed by member companies. The students are trained in Java, C-sharp and Android technology. They start their day with three hours in the classroom, followed by four hours of practical laboratory work, and they are also given extensive homework. Mentoring is a central part of the course. The mentors coach, check homework, submit progress reports and give marks. Mentoring remains attractive for the companies, even though it is cost-intensive for them, since they deploy some of their most skilled employees as mentors. The mentors can decide which students will be offered jobs when they graduate, and the company can quickly propose adjustments to the trainings where necessary.

The **Academy387** is the skills development programme run by HUB387's 16 member companies. At the Academy, IT professionals and aspiring IT workers (including the unemployed) can educate themselves via intense online and face-to-face short-term courses, workshops and lectures designed by professionals and world-class industry leaders. Programmes take account of the growing market demand for particular skill sets, technologies and expertise. Academy387 works as a model that manages the selection of courses, student enrolment, feedback on teachers and testimonials. Company representatives are heavily involved because they jointly develop curricula and act as trainers and mentors. The member companies created 130 new high-quality jobs in 2014 and more than 160 in 2015.

The table at the bottom of the next page gives an overview of the two initiatives.

ACHIEVEMENTS AND PERSPECTIVES

New initiatives are emerging based on the current experiences, and interest in the two initiatives is growing.

1. INTEREST IN FRANCHISING THE MODEL IN THE WESTERN BALKANS

Academy387 seeks to reach more students across BiH by offering Massive Open Online Courses (MOOCs). HUB387 is gaining momentum as a model across the region: HUB385 in Croatia opened its doors in 2015 and discussions with potential investors in Serbia are underway. In Bosnia, various IT parks have started to collaborate with Academy387 by hosting satellite training programmes. The BIT Camp model has triggered interest among universities and training institutions in Serbia, Macedonia, Albania and Germany.

2. CONSTANT ADAPTATION AND NEW INITIATIVES

BIT Alliance realised that middle management is a bottleneck and therefore wish to focus more on training existing staff in their member companies, as they struggle to recruit senior developers. Furthermore, INTERA Technology Park in Mostar – the IT centre of Herzegovina – is cooperating with HUB387 and replicating the concept.

3. YOUTH VIEW IT AS A LUCRATIVE CAREER OPTION

HUB387 and BIT Camp have helped to increase young people's awareness of IT job opportunities. For instance, the number of 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.



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«I am striving to become one of the best software developers. That is what matters in my life», tells Nermin, student at BIT Camp. He describes the course as very tough: “The second week was the worst. I was dreaming codes the entire week. But then, in the third week, it made click.»

Students of BIT Camp's first batch: Haris, 21, and Nermin, 29

4. GOVERNMENT RECOGNISES THE POTENTIAL OF THE IT SECTOR

As a result of the IT-buzz created by the IT companies and their dialogue with the government, the Canton of Sarajevo has changed its perception: IT has been introduced as a subject in the canton's primary schools. Moreover, due to advocacy efforts by BIT Alliance and HUB387, IT was recognised as an official economic sector in the Canton of Sarajevo and is part of the Cantonal Development Strategy.

Initiative	BIT Alliance	HUB387
Type	Business association	Technology hub and co-working space
Goal	Achieve recognition of BiH in the world as a destination where top IT experts work.	Bring high value programmes and clients starting within the IT industry in order to generate more jobs.
Skills development programme	BIT Camp	Academy387
Type of training	Six-months training	Various short-term courses
Teachers, trainers	Diverse backgrounds: industry leaders, universities, freelance IT professionals	Various teachers from BiH and abroad
Students	People with no professional IT background	IT professionals who upgrade their skills and unemployed who get introductory courses
Certificates	By BIT Camp	By Academy387



Young men and women on their way to become successful IT specialists.

CONCLUSION

The acute shortage of qualified IT staff made IT companies realise that they had to take matters into their own hands. The two industry-driven skills development initiatives have had several effects. First, they provide perspectives for unemployed youth in a sector of high interest, and IT professionals receive further training, leading to employment growth among IT companies. Second, several companies have been able to take on business opportunities thanks to these newly trained professionals, and have thus increased their turnover. Third, advocacy efforts have led to changes in IT education governance.

LINKS

HELVETAS

https://easterneurope.helvetas.org/en/projects/bosnia_herzegovina

MarketMakers

<http://www.marketmakers.ba>

BIT Camp

<http://www.bitcamp.ba>

Academy387

<http://www.academy387.com>

Video on BIT Camp

<https://youtu.be/nqifxPkO1wl>

Market Systems Development

<https://beamexchange.org>

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