Iranian Market for Computer Programmers

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1. Introduction

Iran growing knowledge economy is in demand of computer programmers and provides various opportunities for them. Internet penetration in Iran has already reached over 82%, while mobile penetration is above 100% with almost 50% smartphone users (see References). These figures indicate a growing market for software developers and computer programmers.

Advanced software technologies, both for web and mobile applications, and also technologies for back-end developments are vastly employed. Infrastructures in the form of data centers and cloud computing are also provided. More tools are available for application development, such as Farsi add-ons for localization and payment systems with debit cards through banking platforms. Web or mobile applications mostly address the needs of local market, but there are also global interests in some of the software products and applications.

We will look at the ecosystem for high tech startups which are the main marketplace for computer programmers. We will also look at the programmers' lives, and the conclusion will show more facts about the programming market in Iran.

2. Ecosystem

With the advancement of computer technologies and Internet, computer programming is no longer limited to any particular circumstances. Compared with other scientific skills, it does not require high-tech laboratories, nor long years of education, but professional training for programmers and software developers which mainly takes place in colleges and universities. College graduates have the opportunity to join enterprises or they can develop some preliminary idea and join an accelerator program in a team. There are many running accelerator programs around the country, and as soon as a group of developers are admitted to a program, they will receive some pocket money, but most

importantly, they will receive technical or business mentorship. Within the period of three to six months, they should be able to develop a prototype or MVP (minimum viable product) which they then should test the market and convince investors for investments. Successful groups will establish a startup company and can join an incubator to develop the product and also the market and business model and can move forward.

Among many successful startups in Iran, here are few examples:

- TAP30, a ridesharing company.
- Mamanpaz, a shared food providing platform.
- Netbarg, a marketplace for local merchants by offering goods and services.
- ESTD, provides a Three-Phase, Black Oil Reservoir Simulator.
- Cafebazaar, leading Android app marketplace.

Startup movement is growing in Iran: some logos

3. Programmers' Life

There are many examples of contribution by young programmers, in developing life changing software products. As we're witnessing in Iran, the average age of software companies' developers has dropped significantly during the last decade. Our experience shows that top-notch programmers start their journey into the world of programming from high school years. Their self-trainings at high school years make them highly qualified developers at their early 20s and eligible to take significant responsibilities in the industry.

For Iranian students, there are different paths to develop programming skills, such as participating in Informatics Olympiads or robotics contests. In the case of Informatics Olympiads, for example, students go through tough trainings that improve their systematic problem solving skills. They are trained to firstly define problems well, break them down into simplest forms, and prioritize and implement solutions.

Those early trainings, alongside some incentives provided by the government to foster programming skills among youth, have resulted in advancements of software and internet industries in Iran. The participants of Informatics Olympiads are now playing

crucial roles in the market in a variety of fields ranging from artificial intelligence and machine learning, image processing, natural language processing, computer networking, data security, to management and finance.

Iranian companies are competing over attracting these talents by providing dynamic work environments. Due to their outstanding abilities, most startups and enterprises' strategies have been to provide an environment to flourish their creativity for innovations. They construct innovative teams, learn from each other, complement each other, rise ambitious spirits in the teams and make decisions collaboratively toward their self-envisioned goals. The regulators have been supportive to young programmers who plan to follow their careers in knowledge-based companies by providing facilities through Iran's National Elites Foundation.

4. Conclusion

Iran is among the top 20 countries by population with a dominant young generation, and provides attractive market for software and internet products. Special situation of Iran's economy has led to opportunities to build domestic solutions in ecommerce and other Internet based services. This sector has grown relatively faster than other sectors of economy due to lower barriers to entry and infrastructure requirements. International companies have been reluctant to compete in this market for years and that made an opportunity for local players to win in the long run. A wide variety of untouched areas are available to look into. Due to this fact, a growing number of students plan to study related sciences in technical universities and management schools. A highly qualified talent pool is expected in the future of internet industry in Iran and needs further considerations by regulators.

For the participants of Informatics Olympiads, professional future is bright. To complement what they've learnt so far, they need to utilize their skills to solve real world problems. Types of problems that are too big for any of us to encompass all its aspects individually. Team working is crucial and communication and leadership skills make distinguished engineers. In Iran, there has been less emphasis on developing such skills in universities and schools. That makes it the role of companies and individuals to fill the gap between formal education and skill needs of the market. Despite the conventional idea that most of educational and training courses are not applicable in real world, our experience shows the contrary. Informatics Olympiad has been and will remain constructive toward building future of Iran's development in this specific industry.

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