GOVERNMENT OF REPUBLIC OF ARMENIA

DECREE

No35, August 28, 2008

ON APPROVING THE INFORMATION TECHNOLOGY SECTOR DEVELOPMENT CONCEPT PAPER

---

1. Approve the Information Technology Sector Development Concept Paper according to the annexes.
2. Preserve the coordination of Information Technology Sector Development Concept implementation activities for the RA Ministry of Economy.

ANNEXE
of RA Government decree
No35 made at the session of
August 28, 2008

INFORMATION TECHNOLOGY SECTOR DEVELOPMENT CONCEPT PAPER

CONTENTS

I. SUMMARY

This document was developed by the working group established by the Order No ՆԿ- 113-Ա of the President of the Republic of Armenia of July 3, 2007 and was discussed with interested government bodies, representatives of private and public organizations, as well as with local and international experts.

The main goal of the document is to outline the vision and goals for the development of IT sector (the IT industry and information society) in the Republic of Armenia, as well as the challenges, their strategic solutions and implementation stages.

As during the implementation of this concept the society, all strata of society, all governmental groups and entrepreneurs will directly fill its influence, thus one of the most important objectives is the consolidation of society's efforts to secure decent place for Armenia among developed countries.

1.1. THE VISION OF IT SECTOR DEVELOPMENT IS:

- Sustainable information society with advanced ICT infrastructure, high-level computer literacy, high level of computer saturation and internet access, extended use of e-services systems, existence of large local IT market and progressive knowledge-based industry.
- Developed and internationally recognized Information Technology sector, with companies creating big surplus value and providing complex engineering solutions and services, local IT products competitive in international markets.

1.2. INTRODUCTION

Armenia aspires to become a leader in target IT markets and an advanced knowledge-based information society. To reach this ultimate goal Armenia must transform itself from a country outsourcing low value IT services to a provider of high value leading-edge IT products and services with knowledge based information society - a society rooted firmly in world class technical education, information and communications technology (ICT) infrastructure, and computer literacy.

The given Concept Paper is an action plan based on strategic approaches with clearly defined focus designed to stimulate the development of information and communication technologies (ICT) in the country thus providing a leading position for Armenia in the world and development of information society in country.

Taking into account the above-mentioned, the given Concept Paper includes issues related to production of information technologies, telecommunication and information society, as well as comparative directions for their solution.

The provisions of the given Concept Paper will be implemented through:

1) clearly defined programs and within definite timelines that will be designed and implemented according to timeline presented in Section 8;
2) evaluation of tangible results and regular monitoring to clarify next steps and provide accurate guidance;
3) matching international best practices with available resources;
4) the participation of local and foreign partners and investors involved as a result of the close cooperation among state, private and public sectors and their joint efforts.

1.3. ACTION PLAN AIMS TO ACHIEVE THE FOLLOWING KEY MILESTONES:

1) **Short-term (1-3 year period):** build world class ICT infrastructure to support Armenian IT industry and information society development.
2) **Mid-term (3-5 year period):** strengthen Armenia's ICT infrastructure and ensure the presence and penetration of the "Armenia IT brand" in the global market.

3) **Long-term (5-10 year period):** achieve full "Armenia IT brand" penetration in global markets and, particularly, in targeted high-growth market segments. Contribute to the growth of ICT, increase in sector revenues and development of knowledge-based economy through ICT infrastructure and information society development.

1.4. ACTION PLAN SUMMARY

The summary of the given Concept Paper's initial actions and their main objectives is provided below. Details on action plan implementation may be found in Section 8.

ACTION	MAIN OUTCOMES
1. Rollout robust, scalable national ICT broadband backbone network, data centers, networks, systems & applications platforms	+ Develop world class ICT infrastructure + Promote & attract VC & FDI investors + Support IT sector & information society development + Drive e-Commerce, e-Government, e-learning and other electronic services
2. Equip & operate (at least 100) Tele-Centers and internet centers per year in selected Armenia locations- minimum 500 centers in 5 years	**+** Provide low-cost rural Internet access **+** Stimulate e-literacy, e-learning, and other e-services development
3. Rollout (at least 3) pilot e-Government projects in first 3 years and ensure their further replication and application	+ Improve communications & quality of life for Armenians **+** Stimulate e-literacy, e-learning, and e-services development + Push demand for e-Government services and enforcement
4. Increase IT workforce & qualified university graduates by 1500 persons per year	**+** Accelerate workforce growth & development + Attract & retain skilled IT workforce + Promote & attract VC & FDI investors + Embed "real world" IT skill sets to students and scientific-pedagogical staff
5. Design, build & launch 1 large world class IT and High Tech Techno-Park near Yerevan	+ Provide special economic and financial incentives, world class ICT infrastructure, municipal & support services for local & foreign IT companies located in the techno park + Attract FDI & VC investors + Attract & retain skilled IT workforce + Support industry development & revenue growth
6. Establish IT Enterprise Development Fund	+ Promote & attract VC & FDI investors + Promote grant programs for R&D development and start up companies + Stimulate IT product innovation & development + Leverage Yerevan Techno-Park.
Introduce Capability Maturity Model (CMMI) in (20) IT companies per annum. Increase Armenian software sales to $500M in (5) years.	**+** Increase IT industry revenues. + Improve effectiveness of IT companies + Embed global software best practices & standards in "Armenia IT brand" products. + Equip IT workforce with "real world" skills.

ACTION	MAIN OUTCOMES
Develop already operating incubators and build, equip & operate techno-parks, business incubators, and university-based Technology Transfer Centers (TTC) in target Armenian regions	+ Stimulate establishment of start-up companies and incubation activities in Armenia + Stimulate regional IT innovation & product development + Create university-to-incubators innovation channel for IT patents, products & workforce.
Implement marketing campaign for "Armenia IT brand" to penetrate targeted high growth IT markets	+ Define "Armenian IT brand," target audience, competitive advantage, key messages, value proposition based on market research + Position "Armenian brand" to capture "mind share" & market share in target IT market segments + Support implementation of ASECC, VC/FDI fund, Technology Transfer Center and incubator key missions

1.5. AREAS OF INFLUENCE

- Increase of economic competitiveness and productivity
- Increase of RA population's living standard
- Increase of volume of R&D activities
- Creation of highly remunerated jobs
- Increase of IT productivity
- Increase of quality of education

II. PREFACE

The development of IT industry and information society (hereinafter Industry) within the last decade has been a vital lever for the improvement of the competitiveness and productivity of economy in all developed countries, as well as for development of management, innovation and R&D systems and corresponding infrastructure. It was also declared a priority sector and a platform for knowledge based economy.

The need for the development of the Industry in Armenia is preconditioned by the imperative to identify a form of development which considers the current factors such as the comparatively high level of the scientific and educational potential of the population, traditional effectiveness of applied, creative and R&D activities, as well as limitations on the transportation channels, natural resources and territory.

Attributing great importance to the development of the industry of information technologies not only as a separate sphere but also as a vital pillar for overall economic growth of the country and improvement of the productivity and competitiveness of Armenia's economy globally, the Government of the Republic of Armenia made a special emphasis on ensuring the continuous increase in IT industry effectiveness, application of industry services and products in other spheres of economy and formation of information society in the country.

IT industry was proclaimed as a priority sector of Armenian economy by the Government of the Republic of Armenia back in December 28, 2000. Afterwards in 2001 ROA Government asserted the "RA Concept Paper for the Development of the Industry of Information Technologies" and Information Technologies Development Support Council chaired by the Prime-Minister was established by the Order No ՆՀ -896 of the President of the Republic of Armenia July 20, 2001. The Information Technologies Development Support Council (ITDSC), linking the Government with IT business, educational institutions, IT non-governmental organizations, donor and international or-

ganizations, organizes and holds discussions favoring solution of issues related to development of information society and IT industry.

To create preconditions for bringing Armenia's IT industry on a par with international standards Enterprise Incubator Fund was established by ROA Government Decree N 1165 of November 27 under the credit agreement signed with the World Bank. Since 2001 "Viasphere Techno-Park" has been operating, having more than 30 IT companies operating on its territory.

A number of legal acts were adopted, namely RA Law NՀO-40 on Electronic Document and Electronic Digital Signature adopted in December 14, 2004 and RA Law NՀO-176 on Electronic Communication adopted in July 8, 2005. As a result of cooperation with RA Ministry of Economy the RA Statistical Service has developed and started to use the national statistical monthly report form for Information Technologies (form No 1-IT).

Several cooperation agreements and memorandums of understanding were signed with other countries such as Republic of India, Arab Republic of Egypt, etc., as well as with such prominent international companies as Microsoft, Alkatel, Hewlett-Packard, Sun Microsystems, National Instruments, etc.

The organization of numerous events within the framework of IT Month and annual DigiTech specialized information, telecommunication and high tech international exhibition has become a tradition. The first international congress of Armenian technologies was held in San Francisco, USA in 2007.

III. CURRENT SITUATION AND BENCHMARK INDICATORS

In 2006 Armenian IT industry revenues amounted to approximately 84 million USD versus 38 million USD in 2003 thus growing by 122%. An average annual growth rate of 30% was recorded for 1998-2006.

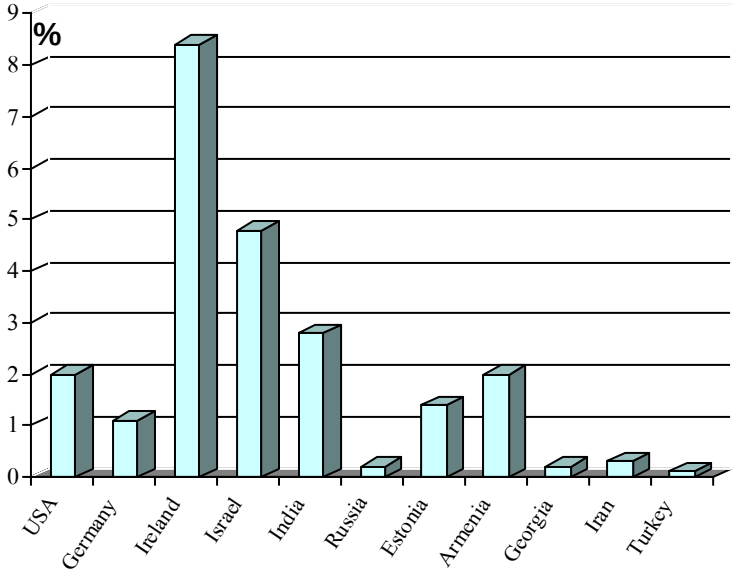
Currently over 200 IT companies operate in Armenia from which 50 are foreign companies (covering 30% of IT product market). Armenia's IT market attracted many foreign investors within the last decade. There was a significant increase in the share of European (17-23%) and US contributions (70%) as compared with 2003.

Approximately 70% of products and services of IT companies are exported to more than 20 countries. The industry export generated approximately 60 million USD in 2006. Almost 60% of export goes to the US and Canada, 20% to EU countries, 16% to Russia and CIS countries.

The number of specialists employed in IT sector is 5000 as of 2006 with an annual 17% increase as compared with the year of 2003.

However, the current situation in ICT industry in Armenia may be characterized as an aggregate of mainly partial achievements, the results of which in terms of the global market can not be considered as significant.

IT industry share in GDP in different countries



According to adopted standards of UN's annual e-readiness report the information society is characterized by electronic web services provided in the framework of e-government – Service Oriented Architecture (SOA). As it is mentioned in e-readiness reports, in 2004, 2005 and 2008Armenia ranked after 100 countries of the world, and, which is more preoccupying, it has regressed during the last several years.

In terms of electronic readiness we have relevantly good position by human capital indicator (57th place in the world), which characterizes the literacy of population and its involvement in educational system. According to this indicator, the level of education of Republic of Armenia is high, as we have large network of schools, high involvement, significant number of universities, and spectrum of specializations.

By communication infrastructure indicator (access to the Internet, computer availability, other means of communication) Armenia ranks 114th, and in terms of the most difficult, WEB presence which is typical for e-government, 117th. Based on existing experience one can consider that in 5 years the 80% of priority WEB services can be implemented.

IV. IT INDUSTRY GROWTH AND INFORMATION SOCIETY DEVELOPMENT TARGET INDICATORS

Key Data	2006	2013	2018
Home computer penetration	20%	50%	70%
Educational computer penetration	10%	80-90%	100%
Public sector computer penetration	10%	80%	100%
Population Internet penetration (in terms of physical, financial, content and language access)	15%	70%	90%
Share of expenses of RA state entities on local IT products in total expenses of state budget	<0.1%	0.5%	>1%
Consumption of local IT products in the internal market – GDP	<0.5%	1%	>2%

Key Data	2006	2013	2018
Share of e-services provided by RA state entities against the total	<1%	50%	80%
Number of IT companies From which Those with foreign capital committed	160 50	400 100	1000 200
IT workforce	5000	12000	20000
Productivity per employee	17 000 USD	25000 USD	50 000 USD
Industry revenues	85 million USD	400 million USD	1 billion USD
Exports	53 million USD	250 million USD	700 million USD
IT companies with ≥ 1000 employees	0	-	>1
IT R&D companies	<10	60	100-200
Large Techno-City	0	1	1
Techno-Parks & incubators	2	5	>10
Venture capital committed	< 1 million USD	100 million USD	>700 million USD
Local open joint stock companies (registered in the local Stock Exchange)	1	30	50-100
Local open joint stock companies (registered in international Stock Exchanges)	0	2	>5

V. CHALLENGES AND THEIR STRATEGIC SOLUTIONS

The given challenges were identified taking into account not only the present preconditions for IT industry growth, information society development and knowledge-based economy imperative but also the policies implemented in the sphere by other countries, as well as the purpose of preservation and development of Armenia's competitive advantages in the region.

The main challenges of the industry development policy and their solutions are provided below:

5.1. LEGAL FRAMEWORK

Deficiency or lack of corresponding legislation contributing to the development of IT industry and information society and enforcement mechanisms.

REQUIRED STEPS

Review, elaborate or develop a legal framework contributing to IT growth in line with international standards and strategic aims of successful countries, define and ensure that effective enforcement machanisms are in place particularly focusing on the development of following directions:

a) Development of e-government, e-trade and e-learning;
b) Promotion of investments and assistance to start-up companies;
c) Copyright protection;
d) Facilitation of business registration process;
e) Improvement of tax and customs administration;
f) Upgrading of mechanisms for import and export of industry tools and products;
g) Creation of model tax payers' institute.

5.2. FINANCIAL AND ECONOMIC INCENTIVES

Limited state funding to the industry, lack of specialized financial institutions, investment companies and venture capital funds. Lack of direct and indirect financial and economic incentives favoring industry growth.

REQUIRED STEPS

a) Implement grant programs with private and public sector involvement targeted at R&D development and start-up companies;
b) Establish investment and venture funds with the involvement of the Government to support industry companies and assist in the implementation of targeted programs;
c) Develop and apply special differentiated financial and economic incentives for industry growth with a clearer definition of the role of public and private sectors.

5.3. EDUCATION

Comparatively low level of e-literacy, insufficient number of high-quality ICT technical, marketing and management specialists.

REQUIRED STEPS

a) Implementation of targeted programs to improve computer literacy in education (from schools to higher education institutions), state system, public centers etc;
b) Creation of educational-informative environment and content, implementation of modern ICT tools, educational process management and distance e-learning systems in educational system, training of professors, use of modern teaching methods;
c) Put educational programs of institutions training and retraining IT specialists and their technical capacities in comformity with best international practices and market demand;
d) Establish business and ICT specialized educational institutions to provide IT industry with professional young entrepreneurs, managers and qualified employees;
e) Promote implementation of joint educational and R&D programs by educational institutions and the private sector with the involvement of prominent local and international IT companies (Microsoft, Sun Microsystems, Intel, IBM, Hewlett-Packard, Alkatel, National Instruments etc.);
f) Design mechanisms for assessement of workforce demand and management of graduates' quality.

5.4. INDUSTRY MANAGEMENT POLICY

Lack of policy focusing on the centralized and coordinated management and development of the industry and its infrastructures. Insufficient public-private partnership and cooperation among the spheres of education, science and industry.

REQUIRED STEPS

a) Define a state body that will coordinate the implementation of state policy adopted by the given Concept Paper, ensure the availability of corresponding mechanisms of centralized management to improve the effectiveness of implemented policy;
b) Establish and develop entities contributing to industry growth and promotion, as well as to effective policy implementation (agencies, associations etc.);
c) Organize a comprehensive industry statistical and reporting system;
d) Design and implement targeted state programs focused on industry development;
e) Ensure the transparency of state policy and the participation of the society and the private sector in the process of its development and implementation;

➢ **Business environment and infrastructure**

f) Make inventory and assess existing information systems of state bodies, with participation form the private sector implement targeted projects aimed at designing and developing corresponding ICT infrastructure fostering the involvement of local producers;
g) Enhance the scope of e-services provided by the Government, ensure their accessibility;
h) Develop and implement e-content strategy comprising potentials of Armenia's culture, literature, arts, science and economy. Present Armenia's past and present achivements in the field of science, technology, literature and arts by means of modern multimedia;
i) Promote programs implemented by private sector, particularly in directions of school connectivity, construction and operation of broadband communication network, implementation of "PC for all" national project, formation of e-learning content, implementation of various e-services, as well as construction of techno-parks and incubators.

5.5. BUSINESS ENVIRONMENT AND INFRASTRUCTURE

Lack of favorable business environment for implementation of activities in IT industry and for universal use of IT tools, as well as ICT infrastructures corresponding to international standards.

REQUIRED STEPS

a) Create and develop ICT infrastructure (national broadband backbone network, low-cost internet access, computer penetration, universal services);
b) Develop and establish technoparks, incubators, Technology Transfer Centers, IT zones with special economic, technological and infrastructure conditions;
c) Support the establishment and development of start-up companies, promote foreign direct investments, and contribute to the improvement of effectiveness of local organizations (business processes and quality improvement, certification, etc.);
d) Promote local demand for IT solutions and products and their application in different areas of state administration, economy and society;
e) Implement actions and targeted programs focusing on ICT security;
f) Contribute to the formation of the capital market of IT companies;
g) Implement industry and public awareness campaigns to present Armenian IT products on a regular basis and to discuss future industry developments and next generation actions.

➢ **International partnership**

No "Armenian IT Brand" positioned in the global IT market, limited export markets for Armenian IT products and services, insufficient presence of prominent IT companies in Armenia.

5.6. INTERNATIONAL PARTNERSHIP

No "Armenian IT Brand" positioned in the global IT market, limited export markets for Armenian IT products and services, insufficient presence of prominent IT companies in Armenia.

REQUIRED STEPS

a) Establish and enlarge partnership with countries with successful IT industry and corresponding international institutions, join international IT organizations, conventions and programs;
b) Establish and develop presence of Armenian IT products in key global IT markets and enhance cooperation with the Diaspora to attract investments and promote the “Armenian IT brand”;
c) Implement targeted long-term programs and engage prominent IT companies in the country’s economy to improve Armenia’s image and promote the “Armenian IT brand” with the help of their experience, reputation and contacts;
d) Develop Armenia’s image as regional IT center by assisting regular implementation of internationally significant events;
e) Support and ensure the presence of Armenia’s IT products and services and “Armenian IT brand” at industry’s major exhibitions.

VI. CRITERIA FOR MONITORING AND EVALUATION OF POLICY EFFECTIVENESS

The effective implementation of the given Concept Paper is mainly preconditioned by the efficiency of policy conducted in the industry and penetration of IT in other spheres of economy.

From this perspective a systemized monitoring with the below provided criteria are required.

1) Computer penetration
2) Number of Internet users in state and private organizations and among the general population
3) Quality, accessibility and cost of e-Government services
4) Use of ICT tools and electronic materials in educational institutions
5) Average time spent on on-line transactions
6) Number of IT companies
7) Employment in IT industry – vocational and general
8) Number of IT graduates
9) Amount of grant, venture and foreign direct investments in IT sector, involvement of international projects (R&D, IT etc.)
10) Increase in IT product development by segments
11) Increase in IT exports
12) Local IT market growth
13) More state and private sector funded industry programs – educational, R&D etc.
14) Increase in the number of programs implemented under state order
15) Number of certified organizations
16) IT shares in GDP.

VII. RISKS

The success of IT industry development and information society formation policy is mostly preconditioned by common goals and joint efforts of involved and related stakeholders. The state policy on IT development should target stable growth of IT industry and implementation of long-term goals through such initiatives as creation of transparent and favorable business environment, involvement of significant direct investments, formation of a flexible legislative framework, human capital development, improvement of competitiveness, and promotion of innovation.

From this perspective consistent industry related policy, as well as coordination of the decision making process are the primary preconditions for state policy effectiveness and industry competitiveness.

The risks related to the implementation of this policy may be also the following:

1) Failure to allocate adequate funding by state and private sectors, as well as by donors;
2) Uncoordinated policy implementation: parallel implementation of projects that are not agreed upon and are inconsistent;
3) Loss of competitive price preconditioned by increasing expenses and changes in the global market;
4) Rapid changes in worldwide IT industry tendencies and developments.

VIII. START UP ACTIVITIES AND TIMETABLE FOR CONCEPT PAPER IMPLEMENTATION

8.1. ACTIVITIES TARGETED AT THE DEVELOPMENT OF INFORMATION SOCIETY IN ARMENIA ARE AS FOLLOWS:

a. National broadband backbone

Measure	Time Table	Goal	Key Actions
Design, develop & build world class ICT infrastructure serving major regions, cities, government & local self-government bodies and private industry in Armenia.	2008 -2018	Rollout of national broadband backbone, data centers, networks, systems & applications platforms to support & drive e-services demand with public-private partnership.	Develop and provide world class ICT infrastructure. - Next Gen backbone - Data centers - Security Ensure conditions for the integration of GOA & municipal government networks, data centers, systems & applications. GOA partners with private firms & attracts FDIs for the implementation of the mentioned goal. Leverage national backbone & network to improve & expand linkages between IT firms, universities & citizens with GOA funded: - Educational Portals - Distance Learning - CBT= e-learning

b. GOA TeleCenters

Measure	Time Table	Goal	Key Actions
Equip and operate national GOA TeleCenters serving citizens in key Armenian regions, cities & towns.	2008-2013	Equip & operate (minimum 100 per annum) TeleCenters in selected areas of Armenia their minimum number being 500.	• Implement Public Key Infrastructure to enable e-services. Select locations; manage development, maintenance & operation. Tender RFPs & award contracts for software, hardware & ISP. Promote e-literacy to improve the quality of education and workforce. Promote low-cost internet access to the public at GOA TeleCenters. **Note:** They maybe located in existing GOA/local self-governance/ArmenTel/HayPost and other offices, as well as in internet-computers centers at schools. This is a low-cost, proven approach to pushing widespread e-literacy.

c. E-Government

Measure	Time Table	Goal	Key Actions
Select, develop and rollout e-Government pilot projects.	2008-2011	Foster IT sector & information society development.	Validate & enforce e-Government standards: - security and safety - piracy - interoperability - infrastructure & networking Define pilot project concepts, selection criteria, technical, & equipment requirements. Potential pilots include: - business registry - e-pension - E-education - e-taxes - e-medicine - e-post services - e-banking Leverage national backbone network to internetwork & integrate GOA & municipal government networks, data centers, systems & applications. Ensure citizens' rights, privacy & protection from computer crime. Utilize GOA e-government pilot projects to improve quality of life (QOA) and drive demand for e-government services: - e-education - e-culture - e-administrative business registry - e-pension - Investor portal - e-taxes - e-medicine - e-agriculture - e-post services - e-banking Develop contemporary multimedia materials with corresponding e-content to present former and present scientific, technical, literature and art achievements of Armenia via electronic means. Develop and implement complex automation applications.

8.2. MEASURES TARGETED AT IT INDUSTRY DEVELOPMENT IN ARMENIA:

a. Quality workforce

Measure	Time Table	Goal	Key Actions
Develop & launch targeted programs aimed at increasing Armenia IT graduates and workforce.	2008-2018	Increase the number of qualified IT graduates and workforce for minimum 1500 per annum.	Partner with higher education institutions and other voc-tech centers, international donors and diaspora to get buy-in. Design scholarship, certification, retraining and other training programs. Ensure participation of local IT companies in the program ilpmenetation process. Combine rollout of national broadband & wireless networks, and existing infrastructure & equipment in higher education institutions and other voc-tech centers. Expand cooperation between GOA, universities, other educational centers private sector & citizens: - scholarships - certification subsidies - IT voc-tech training. Leverage e-education content formation. Initiate short-term programs at universities for quick training and retraining of specialists. Note: 1- Award 1-year graduate level IT training scholarships overseas; 2- Fund IT management and technical certification programs; 3- Implement retraining for IT faculty and specialties 4- Leverage the development and dissemination of IT educaation models in YSU, SEUA, GITC, within WB Enterprise Incubator program and other educational institutions.

b. Building the first major high tech and IT technopark

Measure	Time Table	Goal	Key Actions
Build Armenia Techno-Park supported by world class ICT, municipal infrastructure and services.	2008-2011	**Drive IT sector productivity**	Appoint Program Manager to manage site selection, development, maintenance & operation. Select construction management company GOA partners with private firms & attracts FDI to provide infrastructure (ICT, water, electricity, sewage, roads), for incubators & training facilities. Mobilize & obtain private sector "buy-in" as a partner; develop strategic marketing campaign to promote Techno-Park & IT industry. GOA offers R&D incentives: taxes write-offs & holidays for research, grants. GOA: protect IP rights; promote patent transfer rights from public R&D to industry. Trains and certifies Techno-Park employees and organizations. Note: **Design, build & launch (1) techno-park near Yerevan.**

c. IT enterprise development fund

Measure	Time Table	Goal	Key Actions
Establish Armenian IT Enterprise Development Fund (IT-EDF) to promote private IT companies; attract foreign direct investment (FDI) & venture capital (VC) to develop and commercialize IT innovation, and products.	2008-2018	Attract $700M - $1B in FDI & VC capital within 10 years from global technology companies & venture capitalists. GOA equity stake = 5-10%.	Select & appoint ITEDF Board members; hire senior management team. Mgt. team develops ITEDF business plan for BOD approval. Support ITEDF with world class "Armenia brand" marketing campaign to attract & capture FDI & VC capital. ITEDF "Armenia brand" marketing campaign attracts FDI to finance R&D-driven IT product development. Leverage PPPs: IT companies to increase DFI, and IT product development. EIF supports IT start-ups with "real world" consulting services: - entrepreneurship - project management - strategic business plans

Measure	Time Table	Goal	Key Actions
			- tech. sales & marketing Armenia brand" marketing campaign promotes FDI & VC investors, and start-up company investment proposals. Note: This action assumes: - GOA establishes a publicly –capitalized, but privately managed private equity/VC fund; - Preliminary funding of $50-$100M from Armenian Diaspora, development banks & bilateral aid donors

d. IT product quality assessment (certification)

Measure	Time Table	Goal	Key Actions
Establish Armenian Software Engineering Competence Center (ASECC) to certify, train & monitor Armenian software developers to ensure compliance with global CMMI standards & best practices.	2008- 2013	**Train (20) IT companies per year in CMMI standards.**	Ensure CMMI compliance to drive software market revenue growth. Establish ASECC to assess, train, certify & monitor private sector software developers to ensure CMM compliance. Appoint ASECC Managing Director; develop ASECC strategic business plans. Train ASESS staff in CMMI and other training workshops: - Site Coordinator Workshop - Consulting Skills Workshop - Software Improvement - Software Customization Based on market research identify the programming skills that are required for competition in the global market. Note: Increase software sales to $500M in (5) years.

e. Establishment and development of Marz IT tecnoparks and incubators

Measure	Time Table	Goal	Key Actions
Replicate EIF business incubator model; and Marz technoparks, establish university-based technology transfer centers (TTC) and incubators to stimulate regional IT innovation, product development and revenues.	2008-2015	Build, equip & operate (5) technoparks or business incubators, and (3) TTCs in (5) target Armenian regions.	GOA partners with private firms & FDIs to build robust infrastructure (ICT, water, electricity, sewage, roads). Ensure private sector participation; develop strategic marketing campaign to promote incubators & TCCs. GOA offers R&D incentives: tax write-offs & holidays, research grants, innovations funds, awards. TCCs & incubators commit to applied product innovation and development, not pure R&D. IT incubators commit to CMMI and other trainings & compliance action plan. IT incubators support IT start-ups with "real world" consulting services: - entrepreneurship - project management - strategic business plans - tech. sales & marketing Note: Focus should be made on applied, not pure, R&D-product development. First regional technopark-incubator to be initiated in Gyumri.

f. "Armenia IT brand" marketing campaign

Measure	Time Table	Goal	Key Actions
Develop & rollout phased, world class strategic marketing & promotional campaign to position "Armenia IT brand" in targeted high growth IT target markets.	2008-2018	- Select "Armenian brand," target audience, competitive advantage, key messages, logo, value proposition based on market research; - Position "Armenian brand" to capture "mind share" & market share in	GOA ensures liberalized, open, transparent business climate: - enforce patent protection rights - foster ICT infrastructure - enforce e-Security laws. - Establish IT representations overseas Hire seasoned IT industry sales executives ("insiders") to plan & implement the "Armenia brand," campaign, attract & capture FDI & VC investors.

Measure	Time Table	Goal	Key Actions
		target IT market segments; - Increase ASECC software sales by $500M; - Ensure $700-$1B in FDI & VC investment; - Support Techno-Park, Armenia backbone network, incubator main missions.	Target segmented high value, high growth markets: - geographic - product/services applications - vertical markets Select seasoned marketing executive & world class advertising & PR agency. Select "Armenian brand," target audience, competitive advantage, key messages, value proposition. Rollout phased campaign: - USA & Russia; - Europe, Middle East