



Estimating e-Government Master Plan Seven Projects in Nepalese Perspective

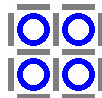
Final Report



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National Information Technology Center
Singhdurbar, Kathmandu



Submitted by



IT Professional Forum

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Background

The Government of Nepal is initiating the e-Government Project in Nepal in near future. In this regard a study was concluded by a team comprising resource persons from Ministry of Environment, Science and Technology (MOEST) and KIPA and came out with e-Government Master Plan. The Government of Nepal wanted to re-evaluate the project's estimation (seven applications identified) made in the e-Government Master Plan document in the local context by a third party study team and the same was entrusted to the Information Technology Professional Forum (ITPF) by National Information Technology Centre (NITC). This report is the result of the agreement to this effect that was signed between ITPF and NITC.

ITPF commend that this initiation of implementing e-Government Master Plan is a right approach in the direction of good governance and will also help to expand ICT market within the country. ITPF has earlier submitted a report on “The Framework of e-Governance Roadmap” to NITC, MOEST, which includes strategy, suggestions for institutional setup and implementation guidelines. The same report is also attached with this estimation report for handy reference.

Brief Review of the Master Plan Document

The master plan document consists of Good paperwork/ documentation on Analysis. It also has Considerable Vision/ Strategy and Project Identification. Action Plan of priority projects has been done in preliminary level and assumed to be done during Execution Phase.

ITPF feels that careful implementation plan is a vital part for the success of such project. Therefore it should be adequately addressed during execution phase. The projects identified in the document cannot be thought of as standalone entities – an integrated view is essential. So, individual consultants working on individual projects without a unified guideline for standards is not advisable except for information dissemination part of web portal. Even without considering the deployment and implementation part, the envisaged time frames for many projects are too short to be completed on time.



Cost Estimations

Estimated Project Cost for EA

Item	Est. Time (In Man-months)	Est. Rate per man-month	Est. Cost USD
Manpower			
EA Consultant/Project Manager	12	15,000	180,000
National EA Expert	12	5,000	60,000
Developers	24	4,000	96,000
			336,000
Capital Investment (Equipment)			
	Units	Est. Rate per	Total in USD
Server	2	50,000	100,000
Workstations	10	2,000	20,000
Development tools	2	20,000	40,000
			160,000
Human Resource Development			
Development tools Specific Training	4	15,000	60,000
Users Training	2	10,000	20,000
			80,000
Miscellaneous 1% of HW+SW			
			3,360
Contingency 5%			
			28,800
Custom and Taxes 20%			
			32,000
Total Deployment Cost			640,160

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Estimated Project Cost for GIDC

Item	Est. Time (In Man-months)	Est. Rate per man-month	Est. Cost USD
Manpower			
Datacenter Architect	12	15,000	180,000
System Architect/GIDC Manager	12	6,000	72,000
System Administrator	24	4,000	96,000
Database Administrator	24	4,000	96,000
Network Administrator	24	4,000	96,000
			540,000
Capital Investment (Equipment)			
	Units	Est. Rate per	Total in USD
DB server	Consolidation of NID,E-edu, Groupware Servers.		
Management server with software	2	20,000	40,000
Firewall	2	10,000	20,000
Workstation	10	2,000	20,000
Installation and Commissioning			30,000
			110,000
Miscellaneous 1% of HW+SW			
			1,100
Contingency 5%			
			5,500
Custom and Taxes 20%			
			22,000
Total Deployment Cost			
			678,600
Annual recurring Cost			
Manpower	10	5,000	50,000
AMC of All Hardware	15% of total hardware		16,500
			66,500

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Estimated Project Cost for NID

Districts	Total Units	Unit cost in USD	Total
VDC			
Capital Investment (Equipment)			
Core NID Server	4	200,000	800,000
SAN Switch	2	12,000	24,000
Storage	2	100,000	200,000
District DB Server	82.5	10,000	825,000
Web Server	4	10,000	40,000
Computer Laptop (OS and OA)	4942	1,000	4,942,000
Document Scanner	4856.5	50	242,825
Finger Print Scanner	4856.5	45	218,543
Card Reader	4848	45	218,160
Solar Power System	1583.95	2,000	3,167,900
Power backup for CORE NID Servers	4	35,000	140,000
Power backup for District Servers	75	3,000	225,000
Power backup for Workstations	3281.8	1,000	3,281,800
Card printer	90	60,000	5,400,000
NID Card (Smart Card with 16K mem)	15000000	0	5,250,000
			24,975,228
Software Application			
DBMS Oracle for CORE NID Server	9	40,000	360,000
DBMS Oracle for District DB Server	75	15,000	1,125,000
NID Application	1	3,000,000	3,000,000
			4,485,000
Human Resource Development			
Training	4932	300	1,479,600
Miscellaneous 1% of HW+SW			309,398
Contingency 5%			1,562,461
Customs and Taxes 20%			5,892,046
Total Deployment Cost			32,811,687
Annual recurring Cost			
Manpower	4932	2,400	11,836,800
AMC of All Hardware			3,746,284
AMC of All Softwares			897,000
			16,480,084

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Estimated Pilot Project Cost for NID

	Total Units	Unit cost in USD	Total
Capital Investment (Equipment)			
Core NID Server	4	200000	800,000.00
SAN Switch	2	12000	24,000.00
Storage	2	100000	200,000.00
District DB Server	4	10000	40,000.00
Web Server	2	10000	20,000.00
Computer Laptop (OS and OA)	40	1000	40,000.00
Document Scanner	10	50	500.00
Finger Print Scanner	20	45	900.00
Card Reader	20	45	900.00
Solar Power System	0	2000	0.00
Power backup for CORE NID Servers	4	35000	140,000.00
Power backup for District Servers	4	3000	12,000.00
Power backup for Workstations	2	1000	2,000.00
Card printer	2	60000	120,000.00
NID Card (Smart Card with 16K mem)	100000	0.35	35,000.00
			1,435,300.00
Software Application			
DBMS Oracle for CORE NID Server	9	40000	360,000.00
DBMS Oracle for District DB Server	4	15000	60,000.00
NID Application	1	1200000	1,200,000.00
			1,620,000.00
Human Resource Development			
Training	40	300	12,000.00
Miscellaneous 1% of HW+SW			30,673.00
Contingency 5%			154,898.65
Custom and Taxes 20%			611,060.00
Total Deployment Cost			3,863,931.65
Annual recurring Cost			
Manpower	40	2400	96,000.00
AMC of All Hardware			215,295.00
AMC of All Softwares			324,000.00
			635,295.00



Estimated Project Cost for Groupware

Item	Est. Time (In Man- months)	Est. Rate per man- month	Est. Cost USD
Manpower			
User Interface Designer	18	4,000	72,000
Developer/Coder/Programmer	60	4,000	240,000
Documentation Specialist	4	3,000	12,000
			324,000
Capital Investment (Equipment)			
	Units	Est. Rate per	Total in USD
DB server	2	50,000	100,000
Workstations	10	2,000	20,000
Development tools	2	20,000	40,000
Installation and Commissioning			30,000
			190,000
Human Resource Development			
Training for Trainers	400	500	200,000
User's Training	15000	100	1,500,000
			1,700,000
Miscellaneous 1% of HW+SW			
			1,900
Contingency 5%			
			110,700
Custom and Taxes 20%			
			38,000
Total Deployment Cost			
			2,364,600

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Estimated Project Cost for E-education

	Total Units	Unit cost in USD	Total
Capital Investment (Equipment)			
Core EIDC Server	4	150,000	600,000
SAN Switch	2	12,000	24,000
Storage	2	200,000	400,000
District Server	75	10,000	750,000
Web Server	4	10,000	40,000
Laptops (500 sites * 10 units)	5000	500	2,500,000
Solar Power System	125	2,000	250,000
Power backup for CORE EIDC Servers	4	35,000	140,000
Power backup for District Servers	75	3,000	225,000
Accessories (Scanner, Webcam, Wifi, Camera)	500	1,000	500,000
Networking	500	1,000	500,000
Printer	500	400	200,000

6,129,000

Software Application

Content Already developed(UNDP & other sources)		Free	0
New Content Development for 100 subjects	100	7,000	700,000
Content Authoring tools	1	25,000	25,000

725,000

Human Resource

Lab Supervisor training	500	300	150,000
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Miscellaneous 1% of HW+SW

70,040

Contingency 5%

353,702

Customs and Taxes 20%

1,370,800

Total Deployment Cost

7,427,742

Annual recurring Cost

Manpower	500	2,400	1,200,000
AMC of All Hardware			919,350
AMC of All Softwares			145,000

2,264,350

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Estimated Project Cost for Government Representation Portal

Item	Est. Time (In Man- months)	Est. Rate per man- month	Est. Cost USD
System Study and Analysis	6	5,000	30,000
Government Representation Portal development (Framework with Content Management System)	6	4,000	24,000
Customization for each ministry and departments	18	3,000	54,000
Government Representation Portal	18	4,000	72,000
Transactional modules			
a. Birth registration and Certificate			
b. Marriage registration and certificate			
c. Character Certificate			
d. Vehicle bluebook renewal/Nagarpalika tax renewal			
e. Driving License apply and renewal			
f. Passport renewal			
g. Tax filing			
h. Lok Sewa Job application			
i. Petition filing and status checking			
Training tools/materials Development	6	5,000	30,000
Including Citizen awareness material			
Training	18	2,000	36,000
Installation 10%			24600
Citizen Awareness/incentives/etc			100,000
1 prg/week for 1 year(50)			
Hardware cost		Included in GIDC	
Software for server		Included in GIDC	
Total deployment cost			370,600

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Estimated Project Cost for Infrastructure			
Item	Est. Time (In Man-months)	Est. Rate per man-month	Est. Cost USD
Manpower			
Network Architect	12	15,000	180,000
Network Administrator	12	6,000	72,000
System Administrator	24	4,000	96,000
			348,000
Capital Investment (Equipment)			
	Units	Est. Rate per	Total in USD
Optical Cable in KM	700	40,000	28,000,000
Multi Service Provisioning Equipment 10G	6	80,000	480,000
Multi Service Provisioning Equipment 10G	14	60,000	840,000
Networking equipments For Ministries	20	20,000	400,000
Wireless equipments for remote conectivity	100	10,000	1,000,000
			30,720,000
Miscellaneous 1% of HW+SW			307,200
Contingency 5%			1,536,000
Custom and Taxes 20%			6,144,000
Total Deployment Cost			39,055,200
Annual recurring Cost			
Network Adminstrator	12	5,000	60,000
AMC of All Hardware	15% of total hardware		4,608,000
			4,668,000

Please note that this cost estimation study was done by the team of ITPF experts in a very limited time. We have tried to make the estimation as complete as possible with separate hardware cost, software cost, manpower, maintenance and recurring cost for each project. We didn't have enough time to verify whether any additional cost will be required at the time of implementation, or any of it needs to be removed because of "duplication" across different projects when the entire e-Governance is treated as a single integral entity rather than stand alone projects.

Besides merely estimating the cost of the proposed projects, we also felt it was necessary to re-iterate our philosophy for implementation of e-Governance as stated in the following section.

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Recommendations and Conclusion

Pilot projects are necessary.

During our study, a detailed estimation is done for NID in two parts – one for the complete project and another for pilot project. Based on this estimation, it is evident that the piloting can be done at a small fraction of the cost of such project. Therefore, it is highly recommended that such projects that need replication at various levels are first done as pilot, only then scaled and replicated.

Local experts must be involved.

In some projects, an international consultant will not be required. Most of the development part can be done by the local experts and companies. Therefore it is suggested that local expertise is given higher priority for such assignments.

Strategy for success is a must.

With natural human tendency of resistance towards change, adequate strategy is required in each project for convincing people to use it. While training is required to make people comfortable using the system, monitoring, evaluation, and reward plays a vital role in success of such projects.

Already functional systems must be identified and integrated.

As many government offices do already have their own computer based information system, incremental work can be done in systems that do already exist in isolation. This will be instrumental in avoiding duplication of the work, and ensuring speedy and participatory implementation. ITPF, for example, has already developed an e-procurement portal, and handed over to HLCIT, which can be integrated in e-Gov system at almost no cost.

An integrated view and unified team is indispensable.

As suggested earlier, since any project of e-Governance cannot be thought of as standalone entity, instead of individual consultants, a team of international consultant(s) and local experts is essential for design, development, and implementation of e-Governance project with an integrated view. Institutional setup for implementation as recommended in “The Framework for e-Governance Roadmap” report is highly recommended.