

The Implementation Plan report in respect of the Feasibility Study for an e-Education Initiative in South Africa

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1 Summary

1.1 Introduction

The Implementation Plan provides indicative timeframes for procuring and implementing the e-Education Initiative.

The report firstly summarizes the overall service delivery approach for the e-Education Initiative (as per the Needs and Options Analysis reports) and secondly, provides per Pillar an outline of envisaged processes and related timeframes required to attain the output specifications (as detailed in the Due Diligence and Procurement Option Reports). This report presents the process implications for each output specification in the form of activities with related notional deadlines for completion. It is assumed that by the start date of January, 2009:

- The E-Education Initiative planning has been completed;
- Funds for implementation have been secured; and
- Management structures for implementation have been established.

1.2 Service Delivery Approach

1.2.1 Introduction

There are myriad options to consider when planning implementation of the e-Education Initiative. Clearly, no single 'solution' will meet the needs of the Department of Education, as mapped out in the Needs and Options Analysis. Rather, a sophisticated approach to delivery of services, which carefully integrates and sequences implementation of the different Pillars of the e-Education Initiative, is needed for the overall Initiative and at each participating school and college.

This approach needs to take cognisance of three key realities:

- 1) The 'solution' required for each public school and FET college campus may be different according to its particular contextual profile and needs, the specific subjects, learning areas, and/or programmes it is offering, and the preferences/choices of its community.
- 2) Different schools and colleges are already at different stages of e-readiness and e-maturity.
- 3) The service delivery approach and accompanying management structures for the e-Education Initiative need to make provision for simultaneous implementation of a diverse range of linked solutions over an extended period.

With this in mind, the Service Delivery Approach is analysed at two levels: the System Level and the Site Level. Each level is considered in turn, and the recommendations made in the Options Analysis integrated into a single, coherent Service Delivery approach. This approach focuses on delivering services in the three key service areas of:

- 1) Enhancing logistics and operations;
- 2) Building educators' capacity to teach effectively; and

3) Providing all learners access to quality education.

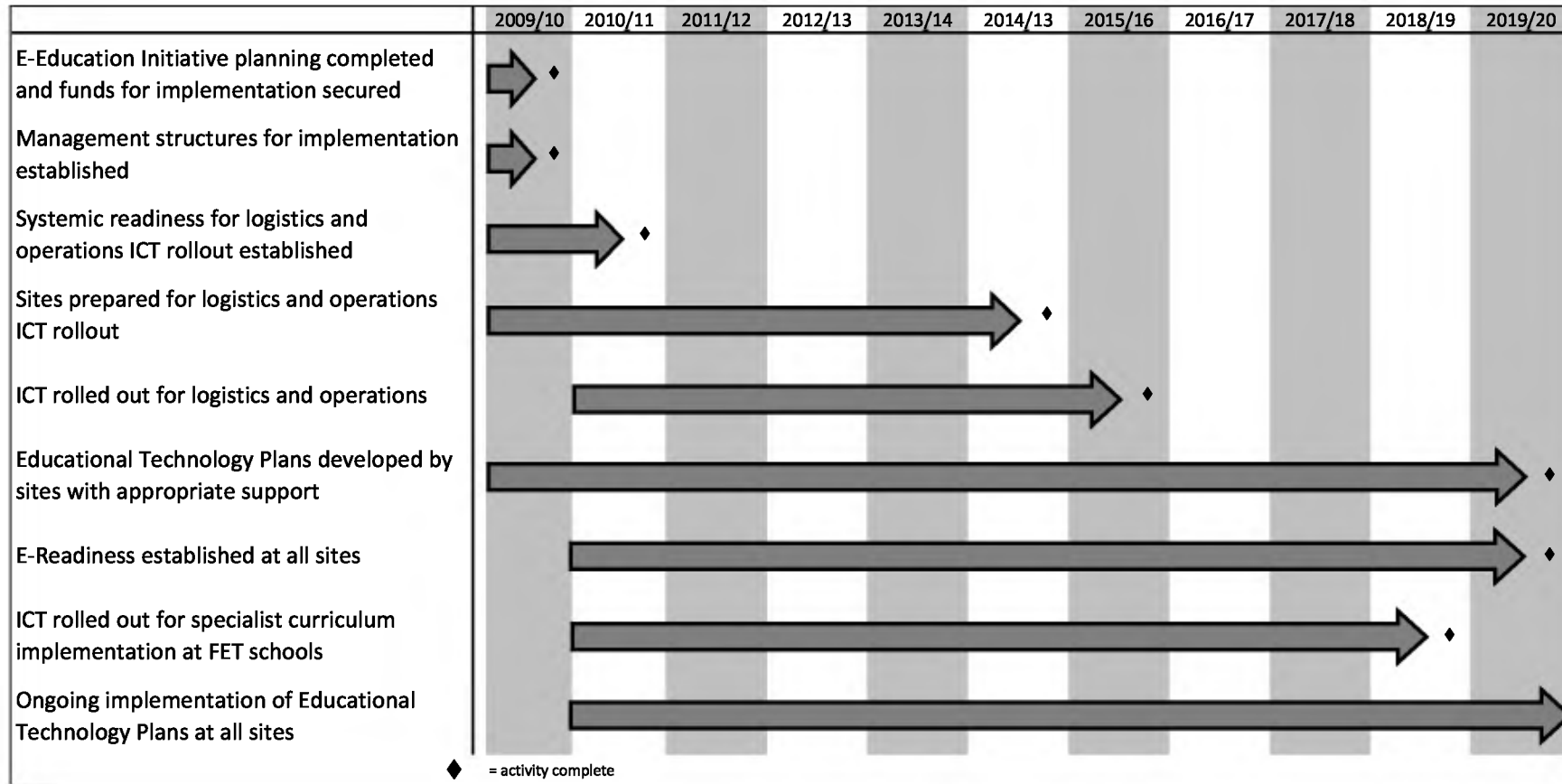
A four-phased approach to implementation at the site level (i.e. at individual schools and FET college campuses) is proposed, which seeks to bring together the various recommendations made during analysis of the options for each Pillar. The four phases proposed are as follows:

- 1) Basic readiness: sites are prepared for rollout of ICT to enhance logistics and operations.
- 2) Logistics and operations: ICT hardware and applications, connectivity, and associated professional development, maintenance, and support are provided to schools and colleges predominantly to enhance management and administration processes at site level.
- 3) E-Readiness: sites are prepared for rollout of ICT to support teaching and learning.
- 4) Teaching and learning: ICT hardware and applications, connectivity, content, and associated professional development, maintenance, and support are provided to schools and colleges predominantly to support teaching and learning at site level.

It is not anticipated that these phases will roll out uniformly across every school and FET College, given that different sites are already at significantly different stages of advancement regarding completion of these phases. Consequently, a detailed baseline study will be required to determine which schools and colleges are busy with which phase of implementation, if any, and what gaps exist that need to be plugged. Following this, a monitoring system will be required in order to be able to keep track of progress made with implementation at each site.

Implementation of the e-Education Initiative is dependent on a number of systemic changes that need to be implemented before roll out of different phases can commence. The key systemic issues that will need to be resolved prior to roll out of ICT both to enhance logistics and operation and to support teaching and learning are outlined in the Options Analysis report.

The above can be charted as follows (note that timeframes are notional only):



More detail on each phase is presented below.

1.2.1.1 Phase One: Basic Readiness

Before a school or FET college takes ownership of any ICT infrastructure, certain conditions need to be met on site. Details of the basic readiness requirements are provided in the Options Analysis report.

1.2.1.2 Phase Two: Deploying ICT Infrastructure to Support Administration and Management

Although the e-Education Initiative is strongly focused on deployment of ICT to support teaching and learning directly, it is clear that a very important component of this is to ensure that a reliable, robust ICT infrastructure is established to support educational management and administration. There is compelling evidence to justify beginning rollout of the Initiative by focusing on deploying the initial ICT infrastructure needed for management and administration purposes.

Given this, Phase Two of the e-Education Initiative will be a 'push' strategy, focused on rolling out ICT infrastructure for administration and management purposes, as well as infrastructure for teaching IT and CAT at registered schools and for teaching of ICT programmes at the FET colleges' campuses where these programmes are being taught. In addition, during this phase, a robust, scalable ICT connectivity network for the public schooling and FET college systems will be established as per the recommendations outlined.

Details of a proposed broad 'push' strategy are provided in the complete Options Analysis report.

1.2.1.3 Phase Three: Ensuring E-Readiness at Schools and Colleges

Before deployment of ICT for direct teaching and learning purposes through the e-Education Initiative, it is important to ensure that sites are 'e-ready'. In this context, a state of e-readiness is intended to refer to an individual school or FET college having met a number of conditions that indicates it is ready to harness the educational potential of ICT. Details of the e-readiness requirements are provided in the Options Analysis report.

Once the e-readiness requirements have been met, a school or FET college campus can be considered 'e-ready' and earmarked funds for investment in ICT for teaching and learning purposes can be allocated to that site.

1.2.1.4 Phase Four: Rollout of e-Education to Support Teaching and Learning

The fourth and final phase of the e-Education Initiative will focus on incremental growth in access to ICT infrastructure and connectivity for educators and learners. Implemented together with strategies to build educators' capacity to teach effectively, this will predominantly be a 'pull' strategy, with schools and colleges not receiving means/funds to support ICT infrastructure acquisitions until they have reached a minimum level of e-readiness and developed approved Educational ICT Development Plans to demonstrate that they are able to use these ICT infrastructure acquisitions effectively.

2 ICT Infrastructure

2.1 Introduction

The proposed service delivery approach seeks to combine ‘push’ strategies (where products and services are proactively provided to the public schooling and FET college system, requirements put in place for people to begin to use them to perform their jobs, and change management strategies implemented to mitigate the inevitable disruption that this will cause) and ‘pull’ strategies (where public schools and FET colleges receive products and services as they request them and are ready to integrate it). It is anticipated that each element of this strategy will commence in parallel, although the time required to complete each one will vary significantly according to their relative level of complexity.

2.2 Management and Administrators

The following table outlines envisaged processes and related timeframes required to attain the output specifications for management and administrators (as detailed in the Due Diligence report).

Table 1 Activities and Notional Deadlines for ICT Infrastructure – Management and Administrators

Requirement / Output Specification	Activities	Notional Deadlines
1) Architecture the enterprise-wide view of all ICT requirements and how they integrate, as well as the policies and standards that will guide the construction of the architecture	<ul style="list-style-type: none"> Develop and issue tender for procurement of expert consultancy services to develop the details of Architectures through open tender, complemented by consultation with relevant government agencies such as the DPSA and SITA Adjudicate and award tender Occasional review processes to ensure the architecture remain aligned to the emerging needs of schools and suitably capitalise on technology opportunities 	<p>Month 3</p> <p>Month 6 Annually</p>
2) Design the detailed design of ICT infrastructure solutions	<ul style="list-style-type: none"> Procured as part of the “build and deploy” activities 	N/A
3) Build and deploy a) Build - The acquisition of the specified requirements. The requirements will include local area networking, desktop end-user devices for	<ul style="list-style-type: none"> Development of a procurement policy framework by the Department of Education that set out principles governing procurement agreements (Preferably, such contracts should not exclude regional supply channels and should contain provincial ‘call-off’ 	Month 6

Requirement / Output Specification	Activities	Notional Deadlines
<p>administrators, laptops for principals and printers; and</p> <p>b) Deployment - The installation and implementation of the specified requirements in the target environments</p>	<p>mechanisms to allow Provincial and District Office to effect procurement)</p> <ul style="list-style-type: none"> • Develop and issue tender for build and deploy incorporated into a single agreement (medium term, 3- 7 years contracts are recommended). Multiple outsourcing contracts are recommended to allow: <ul style="list-style-type: none"> - bidders the opportunity to propose in respect of one or more components (for example, local area network installation, printers and PCs); and - allow bidder to propose in respect of one, some or all provinces or regions that cover parts of multiple provinces. - Contracts should require the private party to offer the Department of Education advantages of newer technology as it becomes available. • Adjudicate and award tender(s) 	<p>Month 12 (See 3a above)</p> <p>Month 18</p>
<p>4) Operate - the daily availability of ICT infrastructure by ensuring routine ICT infrastructure management tasks are performed.</p>	<ul style="list-style-type: none"> • Establishment of the National e-Unit to effectively govern the day-to-day management and integration of the initiative. This will entail, among others, the following tasks: <ul style="list-style-type: none"> - Development of IT Governance policies and procedures - Establishment of National Call Centre and integration with Provincial / District ICT Coordinators - Change Management - Configuration Management - Release Management - Availability and Capacity Management - Service Continuity Management - Quality Management - Contract Management / Service Level Management - Financial Management - FOSS Migration Strategy development 	<p>Month 12/ Ongoing</p>

Requirement / Output Specification	Activities	Notional Deadlines
	<ul style="list-style-type: none"> • Integration with the Professional Development, as well as Curriculum and Content development activities (See Governance Structure process implications for integration with e-Education Branch activities) 	Month 18 / Ongoing
<p>5) User Support - The services that provide advice and guidance and other relevant services to the users of the ICT infrastructure</p>	<ul style="list-style-type: none"> • Establishment of National Call Centre for technical support, including policies and procedures <ul style="list-style-type: none"> - Develop and issue tenders for multiple outsourcing contracts. These contracts would have linked obligations and would include: (i) national support centre, (ii) regional (or provincial) support centres, and (iii) local support abilities (iv) central system for recording and management of incidents / problems • Adjudicate and award tender(s) • Provinces and districts will need to be capacitated to perform their key role in monitoring the quality and effectiveness of support services • Integration of Call Centre with ICT Coordinators (Provincial / District), as well as ICT Champions (Schools / FET Colleges) (See Governance Structure process implications for integration with e-Education Branch activities) 	<p>Month 18</p> <p>Month 20</p> <p>Month 24</p> <p>Month 24 / Ongoing</p>
<p>6) Maintain - The services required to keep the deployed ICT infrastructure operating in accordance with its specifications</p> <p>7) Enhancements - Addressing emerging requirements that result in an amendment of then-current specifications</p> <p>8) Refresh - The replacement of existing ICT infrastructure when it reaches the end of its economic life</p>	<ul style="list-style-type: none"> • Develop Maintain / Enhance / Refresh policies and procedures • Develop and issue tenders for Maintenance / Enhance / Refresh services to original manufactures / suppliers, or from third parties. (Multiple outsourcing contracts are expected and these should, where practical, include links to the original equipment manufacturer or supplier) • Adjudicate and award tender(s) • Contract and Service level management should be coordinated 	<p>Month 6</p> <p>Month 12</p> <p>Month 18</p> <p>Month 18 / Ongoing</p>

Requirement / Output Specification	Activities	Notional Deadlines
	<p>nationally but should incorporate a strong provincial / district element. (See section with regards to “Operation” for more detail on the management of the services)</p> <ul style="list-style-type: none"> Provinces and districts will need to be capacitated to perform their key role in monitoring the quality and effectiveness of Maintain / Enhance / Refresh services <p>(See Governance Structure process implications for integration with e-Education Branch activities)</p>	Month 18 / Ongoing
<p>9) Quality management - Activities that aim to maintain and improve quality.</p>	<p>(See section with regards to “Operation” for more detail on the management of the services)</p> <p>(See Governance Structure process implications for integration with e-Education Branch activities)</p>	N/A
<p>10) Transfer - The transfer of ownership of ICT infrastructure to the Institution</p>	<p>This will be dependent on the type of procurement agreement entered into with the supplier(s) of the infrastructure.</p> <ul style="list-style-type: none"> Should ownership transfer at the end of asset lifecycle, this process will be incorporated in the Governance processes of the e-Education Branch 	Unknown

2.3 Learners and Educators

The following table outlines envisaged processes and related timeframes required to attain the output specifications for learners and educators (as detailed in the Due Diligence report).

Table 2 Activities and Notional Deadlines for ICT Infrastructure – Educators and Learners

Requirement / Output Specification	Activities	Notional Deadlines
<p>1) Architectures - The enterprise-wide view of all ICT requirements and how they integrate, as well as the policies and standards that will</p>	<ul style="list-style-type: none"> Develop and issue tender for procurement of expert consultancy services to develop the details of Architectures through open tender, complemented by consultation with 	Month 9

Requirement / Output Specification	Activities	Notional Deadlines
guide the construction of the architecture	<p>relevant government agencies such as the DPSA and SITA</p> <ul style="list-style-type: none"> • Architectures will also be ‘flexible’, as each school’s actual usage of technology will be in accordance with a ‘pull’ strategy that allows them to select and integrate components from approved ranges • Adjudicate and award tender • Occasional review processes to ensure the architecture remain aligned to the emerging needs of schools and suitably capitalise on technology opportunities (The ongoing management and updating of the Architectures, including approved ICT components, should be managed by the e-Unit) 	<p>Month 9 / Ongoing</p> <p>Month 12 Annually</p>
2) Design - The detailed design of ICT infrastructure solutions	<ul style="list-style-type: none"> • Procured as part of the “build and deploy” activities 	N/A
<p>3) Build and deploy</p> <p>a) Build - The acquisition of the specified requirements. The requirements will include local area networking and a range of approved equipment selected by schools in terms of their ICT Development Plans.</p> <p>b) Deployment - The installation and implementation of the specified requirements in the target environments</p>	<ul style="list-style-type: none"> • Development of a procurement policy framework by the Department of Education that set out principles governing procurement agreements (Preferably, such contracts should not exclude regional supply channels and should contain provincial ‘call-off’ mechanisms to allow Provincial and District Office to effect procurement) • Develop and issue tender for build and deploy incorporated into a single agreement (medium term, 3- 7 years contracts are recommended). Multiple outsourcing contracts are recommended to allow: <ul style="list-style-type: none"> - bidders the opportunity to propose in respect of one or more components (for example, local area network installation, printers and PCs); and - allow bidder to propose in respect of one, some or all provinces or regions that cover parts of multiple provinces. - Contracts should require the private party to offer the Department of Education advantages of newer 	<p>Month 12</p> <p>Month 18 (See 3a above)</p>

Requirement / Output Specification	Activities	Notional Deadlines
	<ul style="list-style-type: none"> • Adjudicate and award tender(s) • Provinces and districts will need to be capacitated to perform their key role in monitoring the quality and effectiveness of support services • Integration of Call Centre with ICT Coordinators (Provincial / District), as well as ICT Champions (Schools / FET Colleges) <p>(See Governance Structure process implications for integration with e-Education Branch activities)</p>	<p>Month 24</p> <p>Month 24 / Ongoing</p>
<p>6) Maintain - The services required to keep the deployed ICT infrastructure operating in accordance with its specifications</p> <p>7) Enhancements - Addressing emerging requirements that result in an amendment of then-current specifications</p> <p>8) Refresh - The replacement of existing ICT infrastructure when it reaches the end of its economic life</p>	<ul style="list-style-type: none"> • Develop Maintain / Enhance / Refresh policies and procedures • Develop and issue tenders for Maintenance / Enhance / Refresh services to original manufactures / suppliers, or from third parties. (Multiple outsourcing contracts are expected and these should, where practical, include links to the original equipment manufacturer or supplier) • Adjudicate and award tender(s) • Contract and Service level management should be coordinated nationally but should incorporate a strong provincial / district element. (See section with regards to “Operation” for more detail on the management of the services) • Provinces and districts will need to be capacitated to perform their key role in monitoring the quality and effectiveness of Maintain / Enhance / Refresh services <p>(See Governance Structure process implications for integration with e-Education Branch activities)</p>	<p>Month 18</p> <p>Month 18</p> <p>Month 24</p> <p>Month 24 / Ongoing</p> <p>Month 24 / Ongoing</p>
<p>9) Quality management - Activities that aim to maintain and improve quality</p>	<p>(See section with regards to “Operation” for more detail on the management of the services)</p> <p>(See Governance Structure process implications for integration with e-Education Branch activities)</p>	<p>N/A</p>

Requirement / Output Specification	Activities	Notional Deadlines
10) Transfer - The transfer of ownership of ICT infrastructure to the Institution	This will be dependent on the type of procurement agreement entered into with the supplier(s) of the infrastructure. <ul style="list-style-type: none"> Should ownership transfer at the end of asset lifecycle, this process will be incorporated in the Governance processes of the e-Education Branch 	Unknown

3 Connectivity

3.1 WAN Backbone

The following table outlines envisaged processes and related timeframes required to attain the output specifications for the WAN Backbone (as detailed in the Due Diligence report).

Table 3 Activities and Notional Deadlines for ICT Infrastructure – WAN Backbone

Requirement / Output Specification	Activities	Notional Deadlines
1) Architecture - The enterprise-wide view of all WAN Backbone requirements and how they integrate, as well as the policies and standards that will guide the construction of the architecture	The use of the Next Generation Network is the recommended basis for WAN backbone. <ul style="list-style-type: none"> Establish a sub-unit within the e-Unit that would be focused entirely on WAN services Establishment of a Public-Public Partnership between Department of Education and SITA. Development an agreement that would suitably protect school education interests by providing necessary guarantees. (Contracts should be placed, and managed, centrally by national Department of Education, but should not exclude Provincial / District participation in processes of architectural development) Procure the services of a specialist third party to provide an occasional independent assessment of the viability of SITA Architectures. (The third party may be another government agency or a private party.) 	Month 15 Month 12 Month 4 / Annually Month6 / Annually

Requirement / Output Specification	Activities	Notional Deadlines
2) Design - The detailed design of the WAN	<ul style="list-style-type: none"> The e-Unit's WAN sub-unit should be capacitated to provide assurance regarding the WAN design and develop an Architecture strategy / plan 	Month 15
3) Build and deploy a) Build - The acquisition of the specified requirements; and b) Deployment - The installation and implementation of the specified requirements in the target environments.	<ul style="list-style-type: none"> The e-Unit's WAN sub-unit would consolidate service requirements information, planning, monitoring service delivery and managing variances from target qualities. This will also entail: <ul style="list-style-type: none"> defining output specifications, that is the functionality and performance required of the WAN Backbone; and setting up frameworks for effective contract management. 	Month 18
4) Operate - the daily availability of WAN infrastructure by ensuring routine tasks and services are performed.	<ul style="list-style-type: none"> The e-Unit's WAN sub-unit would consolidate service requirements information, planning, monitoring service delivery and managing variances from target qualities. This will also entail: <ul style="list-style-type: none"> defining output specifications, that is the functionality and performance required of the WAN Backbone; and setting up frameworks for effective contract management. Integration with the National Call Centre, as well as with Provincial / District ICT Coordinators (See Governance Structure process implications for integration with e-Education Branch activities) 	Month 18 Month 18 / Ongoing
5) User Support - The services that provide advice and guidance and other relevant services to the users of the WAN Backbone	<ul style="list-style-type: none"> The e-Unit's WAN sub-unit should integrate with the National Call Centre, as well as with Provincial / District ICT Coordinators to coordinate support interactions with the Public Partner (See Governance Structure process 	Month 21

Requirement / Output Specification	Activities	Notional Deadlines
	implications for integration with e-Education Branch activities)	
<p>6) Maintain - The services required to keep the deployed WAN Backbone operating in accordance with its specifications). Effective delivery of this service is dependent on formal communication channels that allow schools, Districts, and Provincial or National Departments to report problems and for such problems to be effectively progressed (and expedited or escalated as required) and resolved. It is recommended that this matter be managed via a single communication channel and, thus, be combined with the contact centres for ICT infrastructure maintenance and support.</p> <p>7) Enhancements - Addressing emerging requirements that result in an amendment of then-current specifications</p> <p>8) Refresh - The replacement of existing WAN Backbone infrastructure when it reaches the end of its economic life</p>	<ul style="list-style-type: none"> • Establish a sub-unit within the e-Unit that would be focused entirely on WAN services • Establishment of a Public-Public Partnership between Department of Education and SITA. • Development of an agreement that would suitably protect school education interests by providing necessary guarantees. (Contracts should be placed, and managed, centrally by national Department of Education, but should not exclude Provincial / District participation in processes of architectural development) • Procure the services of a specialist third party to provide an occasional independent assessment of the viability of SITA Architectures. (The third party may be another government agency or a private party.) • The e-Unit's WAN sub-unit would consolidate service requirements information, planning, monitoring service delivery and managing variances from target qualities. This will also entail: <ul style="list-style-type: none"> - defining output specifications, that is the functionality and performance required of the WAN Backbone; and - setting up frameworks for effective contract management. 	<p>Month 15</p> <p>Month 18</p> <p>Month 4 (See 2 above)</p> <p>Month 4 / Annually</p> <p>Month 18 / Ongoing</p>
<p>9) Quality management - Activities that aim to maintain and improve quality).</p>	<p>(See section with regards to "Operation" for more detail on the management of the services)</p> <p>(See Governance Structure process implications for integration with e-Education Branch activities)</p>	<p>N/A</p>
<p>10) Transfer - The transfer of ownership of WAN Backbone to the Institution)</p>	<p>Whilst transfer of WAN Backbone assets to the Department is not required, the Department may choose to change its</p>	

Requirement / Output Specification	Activities	Notional Deadlines
<p>We do not recommend that the Department aim to ‘own’ the WAN Backbone. This is not part of the Department’s core activity and also would require skills that the Department is unlikely to be able to retain. The WAN Backbone should be seen as a service.</p>	<p>WAN Backbone supplier (at the end of the agreement’s term or earlier).</p> <ul style="list-style-type: none"> • To cover risks associated with this event, the agreement with the Public Party should cover the Department’s rights in regard to transferring Public Party staff as well as hard and intellectual property assets to its new provider • The contract termination should be managed by the e-Unit. Provincial Departments of Educations would participate in the management of the process to the extent required by the contract’s exit management plan. 	<p>End of contract</p>

3.2 Last-mile Connectivity

The following table outlines envisaged processes and related timeframes required to attain the output specifications for the Last-mile Connectivity (as detailed in the Due Diligence report).

Table 4 Activities and Notional Deadlines for Connectivity – Last Mile

Requirement / Output Specification	Activities	Notional Deadlines
<p>1) Architecture - The enterprise-wide view of all Last-mile Connection services and how they inter-relate, as well as the policies and standards that will guide the construction of the architecture. Owing to the nature of Last-mile Connections, the infrastructure will not frequently be shared between schools. Architectures will, here, be concerned with, for example, the types of Last-mile technologies and their applicability to different situations, as well as integration with other local</p>	<ul style="list-style-type: none"> • Establish a sub-unit within the e-Unit that would be focused entirely on Last Mile services • Develop and issue tender for procurement of expert consultancy services to develop the details of Architectures through open tender, complemented by consultation with relevant government agencies such as the DPSA and SITA (This is a short-term contract to develop architectures followed by occasional review processes to ensure the architecture remain aligned to the emerging needs of schools and suitably capitalise on technology opportunities) • Adjudicate and award tender • Procure the services of a specialist third party to provide an occasional independent assessment of the viability of SITA Architectures. (The third party may be 	<p>Month 15</p> <p>Month 4</p> <p>Month 6</p> <p>Month 6 / Annually</p>

Requirement / Output Specification	Activities	Notional Deadlines
government service requirements.	another government agency or a private party.) (The ongoing management and updating of the Architectures, including approved ICT components, should be managed by the e-Unit)	
2) Design - The detailed design of Last-mile Connections solutions	<ul style="list-style-type: none"> • The e-Unit’s Last Mile sub-unit should be capacitated to provide assurance regarding the Last Mile design and develop an Architecture strategy / plan • Procured as part of the “build and deploy” activities 	Month 24 N/A
3) Build and deploy a) Build - The acquisition of the specified requirements); and b) Deployment - The installation and implementation of the Last-mile in the target environments	<ul style="list-style-type: none"> • The e-Unit’s Last Mile sub-unit would consolidate service requirements information, planning, monitoring service delivery and managing variances from target qualities. This will also entail: <ul style="list-style-type: none"> - defining output specifications, that is the functionality and performance required of the Last Mile connectivity; and - setting up frameworks for effective contract management. • Develop and issue tender for build and deploy incorporated into a single agreement (medium term, 3- 7 years contracts are recommended). Bidders should be encouraged to use subcontractors to improve their geographical deployment footprint. Multiple outsourcing contracts are recommended to allow: <ul style="list-style-type: none"> - bidders the opportunity to propose a range of technologies (i.e. wired or wireless); and - allow bidder to propose in respect of one, some or all provinces or regions that cover parts of multiple provinces. - Contracts should require the private party to offer the Department of Education advantages of newer technology as it becomes available. • Adjudicate and award tender(s) The tenders may be any of national, regional, 	Month 24 Month 4 Month 12

Requirement / Output Specification	Activities	Notional Deadlines
	provincial or local contracts. Management by Provinces / Districts with oversight by the e-Unit Last Mile sub-unit is recommended. This will enable the sharing of lessons learnt in contract management and will also support the continuing development of Last-mile procurement policies.	
4) Operate - the daily availability of Last-mile Connections	<ul style="list-style-type: none"> • The e-Unit’s Last Mile sub-unit would consolidate service requirements information, planning, monitoring service delivery and managing variances from target qualities. This will also entail: <ul style="list-style-type: none"> - defining output specifications, that is the functionality and performance required of the Last Mile connectivity; and - setting up frameworks for effective contract management. • Integration with the National Call Centre, as well as with Provincial / District ICT Coordinators (See Governance Structure process implications for integration with e-Education Branch activities) 	Month 21 Month 21 / Ongoing
5) User Support - The services that provide advice and guidance and other relevant services to the users of the Last-mile Connection	<ul style="list-style-type: none"> • The e-Unit’s WAN sub-unit should integrate with the National Call Centre, as well as with Provincial / District ICT Coordinators to coordinate support interactions with the suppliers (See Governance Structure process implications for integration with e-Education Branch activities) 	Month 21/ Ongoing
6) Maintain - The services required to keep the deployed Last-mile Connections operating in accordance with its specifications 7) Enhancements - Addressing emerging requirements that result in an amendment of then-	<ul style="list-style-type: none"> • Develop and issue tenders for Maintenance / Enhance / Refresh services to original manufactures / suppliers, or from third parties. (Multiple outsourcing contracts are expected and these should, where practical, include links to the original equipment manufacturer or supplier) • Adjudicate and award tender(s) • The e-Unit’s Last Mile sub-unit would consolidate service requirements 	Month 4 Month 12 Month 18

Requirement / Output Specification	Activities	Notional Deadlines
<p>current specifications</p> <p>8) Refresh - The replacement of existing Last-mile Connections when it reaches the end of its economic life.</p>	<p>information, planning, monitoring service delivery and managing variances from target qualities. This will also entail:</p> <ul style="list-style-type: none"> - defining output specifications, that is the functionality and performance required of the Last Mile connectivity; and - setting up frameworks for effective contract management. <ul style="list-style-type: none"> • Integration with the National Call Centre, as well as with Provincial / District ICT Coordinators <p>(See Governance Structure process implications for integration with e-Education Branch activities)</p>	<p>Month 21 / Ongoing</p>
<p>9) Quality management - Activities that aim to maintain and improve quality)</p>	<p>(See section with regards to “Operation” for more detail on the management of the services)</p> <p>(See Governance Structure process implications for integration with e-Education Branch activities)</p>	<p>N/A</p>
<p>10) Transfer - The transfer of ownership of Last-mile Connections to the Institution We do not recommend that the Department aim to ‘own’ Last-miles for the same reason as stated under WAN Backbone above.</p>	<p>Whilst transfer of Last Mile assets to the Department is not required, the Department may choose to change its Last Mile supplier (at the end of the agreement’s term or earlier).</p> <ul style="list-style-type: none"> • To cover risks associated with this event, the agreement with the Public Party should cover the Department’s rights in regard to transferring Public Party staff as well as hard and intellectual property assets to its new provider • The contract termination should be managed by the e-Unit. Provincial Departments of Educations would participate in the management of the process to the extent required by the contract’s exit management plan. 	<p>End of contract</p> <p>End of contract</p>

4 Professional Development

4.1 Implementation Plan

The following table outlines envisaged processes and related timeframes required to attain the output specifications for professional development (as detailed in the Procurement Options report).

Table 5 Activities and Notional Deadlines for Professional Development

Output Specification	Activities	Notional Deadlines
1) Policy guidelines defining levels of competence for ICT use for all educators developed and approved.	Develop and issue tender for the development of policy guidelines for: <ul style="list-style-type: none"> FET College lecturers, Educational managers, Administrators, Technical and maintenance support persons; and District officials. This development process should make provision for consultation with HEIs and other relevant stakeholders.	Month 1
	Award tender.	Month 3
	Submit guidelines to Department of Education for feedback.	Month 9
	Approve final guidelines to be submitted as formal policy.	Month 11
	Distribute draft guidelines to provinces, schools, Colleges, and professional development agencies and make them available for download on Thutong.	Month 12
	Submit guidelines for formal policy and legislation process.	Month 12
	Approve guidelines as formal policy.	Month 18
2) A once-off HEI subsidy to support HEIs in their fulfilment of the requirement to ensure that all educators entering the profession are developed to at least the Adaptation Level	Follow up with all HEI Faculties of Education to ensure that the agreement to achieve the objective of educators entering the system with an Adaptation Level of ICT competence is being integrated into all pre-service programmes.	Month 2
	Circulate draft expanded Guidelines for Professional Development in ICT, to HEIs once they have been approved.	Month 12
	Engage HEI Faculties of Education in planning processes for the attainment of this goal (linked to their submission of once-off subsidy applications below).	Month 6 for teachers, Month 18 for FET lecturers, administrators,

Output Specification	Activities	Notional Deadlines
of ICT use is established and maintained.		educational managers, district officials, etc.
	Develop funding once-off subsidy structure including application criteria, funding parameters, and application processes.	Month 3
	Administer once-off subsidies.	Month 6 onwards
	Establish and maintain online Community of Practice for 'Teacher Educators' to encourage research and sharing of information on ICT professional development matters.	Month 2
	Identify priority learning materials and curriculum guides which can support priority ICT skills development for initial educator training.	Month 13
	Develop and issue tender for development of priority learning materials.	Month 14
	Award tender	Month 16
	Develop priority learning materials.	Month 22
	Distribute and publish learning materials on Thutong.	Month 23
3) A CPTD system for continuing professional development relating to ICT skills is established and maintained.	Develop an online database system – accessible via the SACE website and Thutong – to manage CPTD activities for educators.	Month 5
	Adapt the above online database system to manage CPD activities for non-educator personnel	Month 6
	Establish the necessary systems – as part of the broader CPTD system – to enable approval of relevant CPTD activities that can be taken by educators as part of the broader e-Education Initiative.	Month 3
	Establish the necessary systems – to run alongside the educator CPTD system – to enable approval of relevant professional development activities that can be taken by non-educators as part of the broader e-Education Initiative.	Month 4
	Expand the CPTD system so that it is capable of monitoring the attainment of defined levels of ICT competence by individual educators. This system should incorporate a reporting facility that would enable the Department of Education to monitor the changing levels of ICT competence of educators across all provinces. It should also be capable of handling Recognition of Prior Learning (RPL), so that educators who have already attained defined	Month 3

Output Specification	Activities	Notional Deadlines
	competence levels can have this learning officially recognized and considered during performance reviews.	
	Deploy additional capacity into SACE to take full-time responsibility for managing the professional development aspects of the e-Education Initiative.	Month 6
4) An audit of district level capacity is conducted and additional ICT leadership support staff are identified and/recruited for district offices	Develop and issue tender for the audit district personnel	
	Award tender	
	Report findings of audit and recommend required district level capacity	
	Recruit and appoint additional district level capacity as required.	
5) A structured support programme on district level ICT leadership and support is developed and implemented.	Develop tender for learning materials and guides for the district level leadership ICT leadership programme	Month 2
	Issue tender	Month 4
	Develop learning materials and guides for district level leadership to support e-Education Initiative	Month 7
	Secure funding for district leadership programme	Completed prior to start date.
	Develop tender for provincial implementation of district leadership programme	Month 8
	Provincial departments award contracts to preferred providers for provincial training offerings for district level ICT leadership	Month 9
6) A structured support programme on design and development of Educational ICT Development Plans, directed at school management, is developed and implemented.	Develop and issue tender for professional development agencies to apply to be preferred providers to offer an orientation and detailed structured learning programme on ICT leadership and developing Educational ICT Development Plans for schools and FET Colleges. This course offering should include both face-to-face contact and e-mentoring in the run-up to submission of the Plan, as well as support in implementation of the Plan after its approval. The leadership courses also need to fit into the CPTD points system as described above.	Month 2
	Invite professional development agencies to adapt and/or develop their leadership courses, based on the terms of reference for the tender and submit to national Department of Education as part of their application for preferred provider status.	Month 9

Output Specification	Activities	Notional Deadlines
	Secure funding for ICT leadership orientation and detailed courses for school and College managers.	Completed prior to start date.
	Provincial departments award contracts to preferred providers for provincial training offerings: <ul style="list-style-type: none"> • School leadership orientation; • School leadership detailed course; • FET College leadership orientation; and • FET College leadership detailed course. 	Month 12
7) A series of incentive mechanisms are operational to ensure vibrancy and a diversity of programme offerings including: <p>a) Funding allocations to support programme and resource development for priority interventions;</p> <p>b) A CPTD system to encourage uptake of ICT-related PD offerings; and</p> <p>c) The related e-PD credit system to fund and/or subsidise ICT related PD offerings.</p>	Identify priority learning materials and curriculum guides which can support priority ICT skills development for ongoing professional development.	Month 12
	Develop and issue tender for development of priority learning materials and curriculum guides for ongoing professional development.	Month 14
	Award tender	Month 16 for first batch of priorities and then in 6 monthly cycles.
	Develop priority learning materials.	Month 22 for first batch of priorities and then in 6 monthly cycles.
	Distribute and publish learning materials on Thutong.	Month 23
	Professional development agencies are invited to submit professional development offerings for educators for CPTD approval by SACE.	Month 6
	Professional development agencies are invited to submit professional development offerings for administrators and technical support staff quality approval by SACE	
	CPTD-approved and relevant administrator and technical support offerings are published on Thutong.	Month 8
	Secure funding for ongoing professional development, funded through e-PD credits.	Completed prior to start date.
	Allocate and administer e-PD credits to schools and colleges.	Month 6 onwards
8) All relevant Department of Education	Develop and issue tender for change management strategy and process.	Month 6
	Award tender.	Month 9

Output Specification	Activities	Notional Deadlines
departmental structures are aware of the opportunities created by the e-Education Initiative to support their strategic objectives and are aligning their functions to optimize these.	Complete initial intensive change management processes.	Month 18
	Provide ongoing mentoring and support to the change management process.	Months 11-24

5 Curriculum and Content

5.1 Implementation Plan - Curriculum

The following table outlines envisaged processes and related timeframes required to attain the output specifications for curriculum (as detailed in the Procurement Options report).

Table 6 Activities and Notional Deadlines for Curriculum

Output Specification	Activities	Notional Deadlines
1) National Curriculum statements for GET and FET Schools and FET Colleges are reviewed to develop related ICT integration guidelines to support the attainment of the nationally defined ICT competency frameworks.	Develop and issue tender for the review of the current curriculum in relation to development of ICT integration guides. The national curriculum statements themselves are already policy and will not be adapted. This development process includes consultation with relevant stakeholders. Specify that all curriculum benchmarks, guidelines, and assessment rubrics developed around use of ICT are to be developed as application- and vendor-neutral.	Month 2
	Award tender	Month 3
	Develop a benchmark set of ICT competencies to guide educators in the target levels of ICT attainment and sophistication expected at the key exit points: <ul style="list-style-type: none"> a) Foundation GET; b) Intermediate GET; c) Senior GET; d) FET Schools; and e) FET Colleges. 	Month 6
	Approve ICT competency benchmarks	Month 7
	Conduct a review of all curriculum statements by grade or NQF level to identify where ICT skills are relevant for attainment of outcomes and assessment standards. This will not result in adaptations to existing curriculum statements, but may result in a set of exemplar statements of how ICT can be used to enhance the curriculum.	Month 9
	Building on the above review, provide benchmark frameworks and guidelines to provide support to educators on using ICT to support attainment of the curriculum statements and FET College programme.	Month 12
	Design a series of standardized ICT skills assessment rubrics for each phase in GET level	Month 12

Output Specification	Activities	Notional Deadlines
	and each grade or NQF level at FET level. Two versions should be developed: one for educator assessment and another for learner self-assessment.	
	Submit curriculum review to Department of Education for feedback	Month 12
	Approve curriculum review	Month 13
	Distribute resulting draft policy guidelines to provinces, schools, Colleges, and professional development agencies and make them available for download on Thutong.	Month 14
	Ensure that assessment of learner ICT competence is incorporated into the research and evaluation framework for assessment of learner competencies and used to guide the development of the curriculum framework.	Month 6
	Submit draft guidelines for formal policy and legislation process	Month 13
	Approve guidelines as formal policy	Month 19
	Distribute final policy guidelines to provinces, schools, Colleges, and professional development agencies and make them available for download on Thutong.	Month 20
2) A detailed review of how and where ICTs are required to support the attainment of the entire curriculum (GET, FET schools and FET vocational) is conducted. The resulting resourcing implications are documented and distributed as policy guidelines.	<p>Develop and issue tender for review of how and where ICTs are required to support the attainment of the entire curriculum and the resulting resource implications for:</p> <ul style="list-style-type: none"> • GET Foundation phase, • GET Intermediate phase, • GET Senior phase; • FET (schools); and • FET vocational (Colleges). <p>This should draw on the above policy frameworks and guidelines, define proposed ICT access benchmarks for learners within a content focus area (subject or learning area for each grade or course at each NQF level in the FET College programmes)</p>	Month 2
	Award tender	Month 3
	Submit curriculum review, resourcing implications and ICT access benchmarks to Department of Education for feedback	Month 6
	Approve ICT access benchmarks	Month 7
	Distribute revised curricula, ICT competency frameworks and curriculum guidelines to provinces, schools, Colleges, and professional	Month 8 - Month 14

Output Specification	Activities	Notional Deadlines
	development agencies and make them available for download on Thutong.	
	Submit draft guidelines for formal policy and legislation process	Month 8
	Approve guidelines as formal policy	Month 14
	Distribute final policy guidelines to provinces, schools, Colleges, and professional development agencies and make them available for download on Thutong.	Month 15

5.2 Implementation Plan - Content

The following table outlines envisaged processes and related timeframes required to attain the output specifications for content (as detailed in the Procurement Options report).

Table 7 Activities and Time frames for Content

Output Specification	Activities	Timeframes
3) ICT applications which require national standardization are acquired and made freely available to schools and/or FET Colleges.	Identify ICT applications which require national standardization. These might include applications such as: <ul style="list-style-type: none"> • Departmental HR management systems; • Education management information systems; • Communication platforms; and • Portals to access government and systems information and education content. 	Month 3
	Develop and issue tender for the development and or licensing of standardized ICT applications	Month 4
	Award tender	Month 5
	Develop ICT applications with appropriate consultation and user testing	Month 11
	Distribute ICT applications for schools and Colleges	Month 12
	Support schools and Colleges in the use of the ICT application	Month 12 onwards
4) Schools choose relevant ICT applications when making their Educational ICT Development Plans for ICT infrastructure	Identify ICT applications which do no require national standardization. These might include, amongst others: <ul style="list-style-type: none"> • End user device operating systems. • Office productivity suites. • Administration and management systems (including timetabling systems) Security software. • Specialized educational software. 	Month 3

Output Specification	Activities	Timeframes
	Generate criteria for review of alternative options (including Open Source alternatives – see following recommendation).	Month 4
	Integrate this ICT applications review process into the broader system of reviewing and approving LTSMs in general.	Month 6
	Publish approved products on the LTSM lists to become available for acquisition by schools and Colleges through their Educational ICT Development Plans.	Month 8
5) All infrastructure procured through the Educational ICT Development Plans is partitioned so that it can run both Open Source and proprietary operating systems and office productivity suites.	Ensure that all applications procured and/or developed by the Department of Education are capable of running on a range of operating systems, including Open Source operating systems.	Month 1
	Ensure that all hard drives of servers, principals' laptops, administrative computers, and computers for use in IT and CAT laboratories are partitioned so that they can run both Open Source and proprietary operating systems and office productivity suites, during the first phase of rollout of ICT infrastructure to support management and administration.	
	Ensure that acquisition of Open Source office productivity suites is actively encouraged as an option during the development of Educational ICT Development Plans by presenting different choices to schools and Colleges in support materials, in LTSM approved lists, during support processes, and in professional development interventions.	Month 1 onwards
	Engage with software vendors to determine the possibilities for ensuring that all specialized ICT applications become available in versions that are able to run on the preferred Open Source operating system.	Month 3
6) A FOSS migration strategy has been developed and is being implemented.	Develop and issue tender for development of FOSS migration strategy	Month 2
	Award tender	Month 3
	Submit draft FOSS migration strategy to Department of Education for feedback	Month 9
	Approve FOSS migration strategy	Month 10
	Where required, distribute information and support schools and Colleges, for FOSS migration, as outlined in the strategy.	Month 12
	Where required, submit proposed elements of the FOSS migration strategy for formal policy and	Month 12

Output Specification	Activities	Timeframes
	legislation process	
	Approve FOSS migration strategy as policy (if required)	Month 18
7) e-LTSMs are included on the provincial lists for approved LTSMs.	Integrate review of digital materials into the LTSM approval process.	Month 6
	Ensure that digital materials available through Thutong have the relevant approval status, so that it is clear if the digital resource is on the approved list or not.	Month 8
	Outline relevant evaluation criteria for use by educators, so that educators are also empowered to evaluate material that they access elsewhere.	Month 8
	Give preference to equivalent products that are capable of running on multiple operating systems during LTSM approval processes.	Month 6
8) Schools and colleges are incentivized to procure e-LTSMs through allocations of e-credits	Secure funding for ongoing procurement of ICT applications and educational content as identified in Educational ICT Development Plans, funded through e-LTSM credits.	Completed prior to start date.
	Allocate and administer e-LTSM credits to schools and Colleges.	Month 8 onwards
9) Thutong is managed as a repository of freely available educational content for the schools and FET College curriculum and as the location of online communities of practice for educators and learners	Document the requirements and process for secondment of educators for all content sourcing, review, monitoring, and moderation of communities of practice within Thutong.	Month 2
	Develop and issue a tender for expert management support services to support and/or manage the seconded educators and the content sourcing, review and moderation of communities of practice within Thutong.	Month 1
	Award expert management services tender	Month 2
	Advertise the terms and conditions and application process for educator secondments	Month 4
	Second educators	Month 6
	Develop and issue tender for technical and functional management and support services for Thutong, with a minimum duration of three years.	Month 1
	Award tender	Month 2
	Develop and issue tender for portal hosting of Thutong	Month 1
	Award tender	Month 2
	Manage content, technical and hosting relationships for Thutong.	Month 1 – ongoing
10) LTSMs (digital and general) can	Develop and issue an open tender for the design and develop a comprehensive online LTSM	Month 2

Output Specification	Activities	Timeframes
<p>be ordered and purchased online via Thutong.</p>	ordering and delivery service.	
	Ensure that SITA administers and awards tender, as per requirements of the SITA Act.	Month 3
	Ensure that the LTSM system is hosted by SITA as a business application of the Department of Education, as per requirements of the SITA Act.	Month 3
	Provide information and/or support on the online LTSM ordering and delivery service to provincial departments of Education, district offices, schools, Colleges and professional development agencies.	Month 6
<p>11) Thutong has a wide variety of high quality educational resources printable and computer based which are freely available.</p>	<p>Identify and invest in priority content development focus areas that might not be covered through an open market. These may include:</p> <ul style="list-style-type: none"> a) Translating existing digital educational material into priority indigenous languages in priority content areas, with a particular focus at needs in: <ul style="list-style-type: none"> i) Home language materials at foundation and intermediate phases in GET; ii) Learning materials relevant to language programmes in senior phase GET and at FET levels. b) Methods, tools, and support systems that facilitate learning for learners who experience barriers to learning (Output 27 of the Needs Analysis). c) Methods, tools, and support systems that reduce the isolation and address the unique requirements of learners in rural and farm schools (Output 28). d) Current and learner-focused health education materials, information and resources (Output 29). e) Standard expansion or ‘content’ packs for Office Suites to facilitate the needs of the curriculum and the classroom. This content pack could include templates, clip art, extensions, and sample documents. The recommended delivery mechanism would be a separate installer or package, which should also be downloadable via Thutong. f) Development of educational materials for IT and CAT that use illustrative examples from Open Source products rather than their equivalent Microsoft counterparts 	<p>Month 6</p>

Output Specification	Activities	Timeframes
	(Recommendation 3 for content).	
	Identify specialized subjects where distance learning methods will be appropriate for the school and College sectors, to supplement the non-availability of subject specialists at individual schools and Colleges. Where it is merited, The Department should consider partnering with an identified distance education provider to support the development of Learning Management Systems and associated educational materials and management processes for these offerings (as per Output 30 of the Needs Analysis).	Month 6
	Contract expert instructional design and materials development agency to oversee the overall development of priority materials development investments for Thutong, through open tender.	Month 7
	Second educators to the Department of Education for long-term (say, annual) appointments to develop new materials for Thutong;	Month 8
	Manage the relationship with the materials development agency overseeing the materials development process for Thutong	Month 7 onwards
	Procure the copyright to high quality existing materials so that resources can then be freely distributed without generating additional cost.	Month 8 onwards
	Develop and advocate for a government policy that any government department (national or provincial) commissioning development of educational materials should be required to house the resulting materials, as well as the underlying digital assets, in Thutong so that they can be accessed by any other government department and by the public.	Month 9
	Build structured, long-term partnerships with commercial organizations, CSI Initiatives, and NGOs that currently produce free materials, and support their efforts to raise funds to sustain their business models.	Month 8 onwards
	Develop and issue open tenders for priority centralized, national content development process which will lead to the generation of freely available content made accessible through the Thutong portal platform.	Month 8
	Award content development tenders for priority content development processes	Month 9

Output Specification	Activities	Timeframes
	Devise and manage incentive mechanisms to encourage educator contribution of materials to the Thutong portal and its associated 'learning spaces' (these could include accumulation of e-learning credits and/or earning CPTD points for contributions that are accepted).	Month 9

6 Monitoring, Research and Evaluation

6.1 Implementation Plan

The following table outlines envisaged processes and related timeframes required to attain the output specifications for monitoring, research and evaluation (as detailed in the Procurement Options report).

Table 8 Activities and Notional Deadlines for Monitoring, Evaluation and Research

Output Specification	Activities	Deadlines
1) A comprehensive monitoring, evaluation and research framework for the e-Education Initiative is in place.	Develop and issue tender for the development of a comprehensive monitoring, evaluation framework including detailed engagement with the national and provincial departments of education and the related e-Education Initiative management structure.	Month 1
	Award tender.	Month 2
	Manage relationship with successful agent to ensure appropriate consultation and relevant resulting framework.	Month 2 – 8
	Complete monitoring, evaluation and research framework.	Month 8 with annual review
2) A multi-stakeholder body oversees implementation and review of the monitoring, evaluation and research framework.	Define job descriptions, advertise for and appoint small internal team for monitoring, evaluation and research.	Completed prior to start date.
	Appoint or assign responsibility for district level monitoring, evaluation and research coordination functions	Completed prior to start date.
	Invite nominations for involvement in multi-stakeholder body.	Month 2
	Appoint multi-stakeholder body.	Month 3
	Establish distribution lists for official stakeholder body members and for general interested parties.	Month 3
	Convene first multi-stakeholder body consultation as part of design of overall framework.	Month 4
	Ensure multi-stakeholder body approval of comprehensive monitoring, evaluation and research	Month 5

Output Specification	Activities	Deadlines
	framework.	
	Manage ongoing communication with multi-stakeholder body members.	Month 2 – ongoing
	Manage ongoing communication on monitoring, evaluation and research framework outputs to general interested parties.	Month 8 onwards
	Convene and manage three multi stakeholder body consultations per year.	Month 4 Month 8 Month 12 repeated annually
3) A ring-fenced percentage of the Initiative’s budget is allocated to monitoring, evaluation and research.	Develop project specifications and related budget limits for identified monitoring, evaluation and evaluation projects as detailed in the framework.	Month 8
	Develop and issue tenders for the above projects.	Month 9
	Manage relationships with contracted agencies.	Month onwards
	Manage collation of monitoring data and coordination of research and evaluation activities at district level through provincial departments	Month 9 onwards
	Establish mechanism and application process for administering research grants which support the attainment of the framework objectives.	Month 9
	Administer research grants with relevant agents (such as HEIs or provincial departments of education or individual educators).	Month 10 onwards
	Ensure that all monitoring and evaluation outputs and research findings are published on Thutong.	Month 6 onwards
	Ensure that publications of simple easy-to-read guides or short publications on monitoring, evaluation and research findings for distribution via Thutong and professional development processes are a key output of all projects and that these are presented with consistent design, layout and branding for the e-Education Initiative.	Month 6 onwards