Chapter 3

Elaboration of a framework for implementing the e-Government project in the city Dar es Salaam

3. ELABORATION OF A FRAMEWORK FOR IMPLEMENTING THE e-GOVERNMENT PROJECT IN THE CITY DAR ES SALAAM

In order to elaborate a framework for the implementation of the e-Government project in the four local authorities of Dar es Salaam, the author has proceeded first with the investigation of the methodologies utilised in earlier e-Government projects in Dar es Salaam. Strengths and weaknesses have been identified. Furthermore the author has adapted the e-Government Manual of the German Federal Office for Information Security (BSI)[10] to the Tanzanian needs.

3.1 FRAMEWORK APPLIED FOR THE DEVELOPMENT OF KINONDONI e-GOVERNMENT PROJECT

The e-Government project for Kinondoni started in November 2001 with the workshop on the application of ICT for improved governance in Kinondoni Municipality jointly facilitated by COSTECH and IICD. Since then Kinondoni could reach impressive results especially was able to provide solutions for the following departments: Health, Finance, Education, Human Resources, Trade and Industries and Planning, Statistic and Follow-up. In the same time a concept for a Customer Relation Management system had been elaborated.

The approach followed by the e-Government team was to divide the e-Government project into three phases:

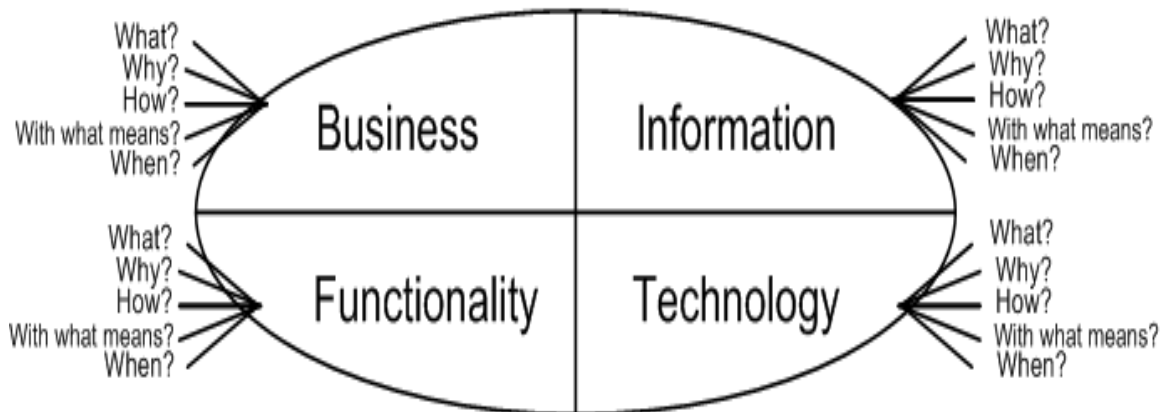1. Problem definition
2. Strategy

3. Technical execution

Accordingly for each phase, different framework had been followed[11].

3.1.1 <u>Phase: "Problem Definition"</u>

The services offered by the public agency are examined from the following four points of view:

- Business
- Information
- Functionality
- Technology

Figure 6: Kinondoni e-Government project. Phase "Problem Definition" – BIFT framework

The aim is to collect as much information as possible answering for each aspect the five questions, without thinking of technical solution for the problem (figure 6):
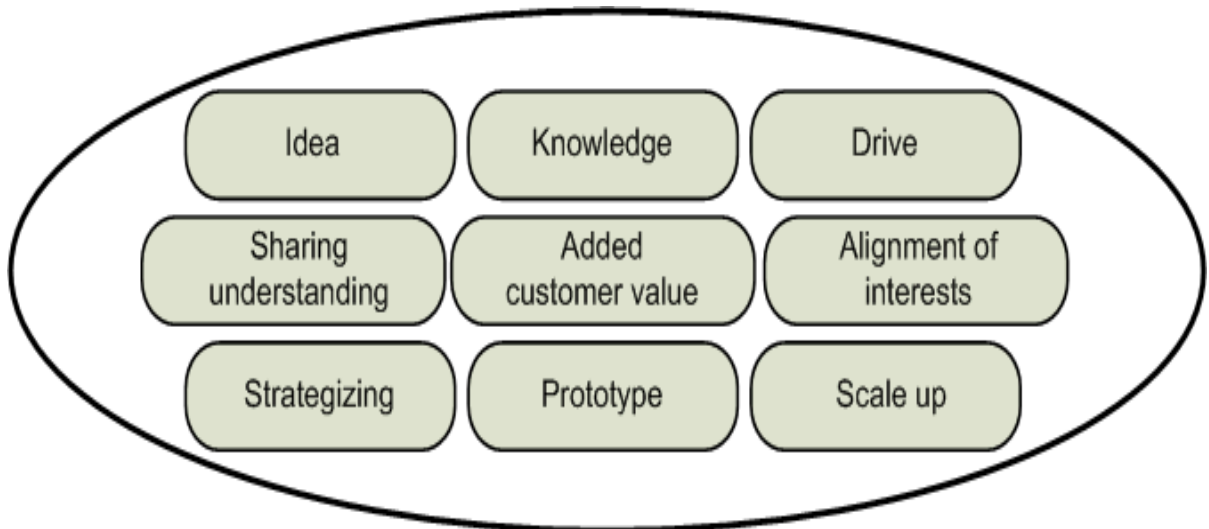
1. What?
2. Why?

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3. How?

4. With what means?

5. When?

3.1.2 <u>Phase: "Strategy"</u>

In this phase a comprehensive project plan is developed, analyzing in detail the following nine points (Figure 7):

1. Idea
2. Knowledge
3. Drive
4. Sharing
5. Understanding
6. Added customer value
7. Alignment of interest
8. Strategizing
9. Prototype
10. Scale up

Figure 7: Kinondoni e-Government project. Phase "Strategy" – CGREPS framework

4.1.3 Phase: "Technical Execution"

An important remark of the adopted framework has been the striving to reach tangible results soon and the shortening of the analysis phase. This was needed since it was one of the first e-Government projects of a certain dimension in the country and there was still limited acceptance both from the decision makers, as well as resistance by the staff. Positive results could overcome the employees' resistance and fears and demonstrate that the allocated founds for the e-Government project could bring immediate return in term of increased efficiency and reduction of operative costs.

For the technical execution, the Information System Strategic Plan (ISSP) template, described in JDEV[12] followed. This template divided in the following five parts:

- Organisational profile
- Information systems strategy
- ICT Solutions
- Resource requirements
- Component and investment program

Table 9: ISSP Framework adopted for the Kinondoni e-Government project

PART I.   ORGANISATIONAL PROFILE
          A   Department/Agency Vision/Mission Statement
                    A.1   Mandate
                    A.2   Vision Statement
                    A.3   Mission Statement
                    A.4   Strategic Thrusts and Programs
          B.   Department/Agency Profile
                    B.1
                    B.2   Current Annual Budget
                    B.3   Organisational Structure
                    B.4   Organisational Functional Chart
                    B.5   Designated IS Planner
          C.   The Department/Agency and its Environment (Functional Interface Chart)
          D.   Present ICT Situation (Strategic Challenges)
                    D.1.   Technology Profile

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[12] **JDEV,** *ISSP Template revised for the Government of Tanzania,* August 2004

The methodology chosen for the e-Government project of Kinondoni Municipality has been to create **user groups** for the following services offered to the public:

- Finance
- Education
- Health
- Human Resources
- Customer Relation Management
- GIS

Members of the user groups were employees of the public agency working in the sector, one member of the management level and one ICT consultant. The user groups met regularly with the aim of completing the ISSP template and give input on its technical realisation.

3.1.3 <u>Remarks about the framework used for the Kinondoni e-Government project</u>

The success of Kinondoni e-Government project signed very important achievement for the development of Tanzania. As first e-Government project of this dimension for the country it showed the viability and the advantages of ICT introduction in the public administration.

The involvement of the user groups proved to be a very effective approach. Through the direct involvement of users from both the operational as well ICT consultants was possible to model the processes in a very realistic way and reach fast desired results. In addition through the early involvement of the personal as active designer of the ICT solution, a very large acceptance could be reached.

In the case of the Kinondoni e-Government project different consulting companies had been involved, and the three phases presented are actually three independent frameworks. Not much work has been done to consolidate the three methodologies. Consequently data obtained from the previous phase are not utilised for the next one, and results already reached in a previous phase were reobtained in the next phase with consumption of time and energies.

In the praxis, the methodology used in Kinondoni e-Government project has been mainly following the ISSP Template, exposed in detail in the table 9. This methodology exposes in full detail the organisation profile and all ongoing IT projects. According to the author's opinion, part II, III and IV could be modified to be more suitable to the existing situation.

The methodology used for Kinondoni e-Government project has still several shortcomings:

- Lacking the analysis of the existing needs: immediately after the description of the organisational profile the ICT solutions are listed.

- Consideration of the budget, which is just presented at the very end in part V. But each solution implemented will strongly depend on the needs and on the available resources

- No consideration is done on needed man-power

- No prioritising is done, which does not allow to select the online-capable service to be implemented.

- For each problem one solution is given, described with a certain level of accuracy.

The ISSP Template is based on the simplistic assumption: one problem can be solved by only one solution and this is immediately described to a certain level of details. Actually the most complete view should be: one problem, according to the needs and the objectives of the public agency, in accordance with the available resources can be solved with one solution.

The framework as it is encourages each user group to list and shortly describe all possible ICT solutions for the specific department, without prioritisation, without selection of the first one to implement, without consideration of the allocated budget. This way the ISSP template has become a very massive paperwork, in which all online-capable service are listed and a possible solution is drafted.

The analysis is too detailed for services which are not being implemented, risking of dispersing consulting energies to the completion of this table and too generic in the case of the services that should really be implemented, which have then to be analysed separately.

3.2 PREFACE TO THE PROPOSED FRAMEWORK

As an improvement of the existing framework, the author adapted a methodology derived from the suggestions of the e-Government Project Team of the German Federal Office for Information Security (BSI)[13]. The systematic approach of the "e-Government Phase Plan" is very suitable also to Tanzania, a country in which the financial resources, the exiting

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[13] www.bsi.bund.de/english/themes/egov/6_en.htm

infrastructure, the available software and ICT devices, the computer literacy is still far behind the level in Germany.

The advantages compared to the ISSP Template is the division of the e-Government implementation process into a series of phases that build on each other both in time and as regards content. In each case this will entail important milestones being achieved, so that the implementation process can proceed as speedily as possible overall.

The paperwork is reduced to the effectively needed solutions to implement and the steps are described in detail[14]. The steps are introduced systematically and subsequently, each action is described exhaustively and traceably and has been put in practice in various e-Government projects realised in Germany successfully.

The e-Government Phase Plan consists of the following six phases:

1. Initialisation,

2. Strategy

3. Analysis

4. High-level design

5. Realisation and test,

6. Implementation and initial operation

Scope of this research has been to tailor the specific steps to the reality of Dar es Salaam and in the particular situation in which the author was performing her research work. It is important to note that for the practical case study significant corrections proved to be necessary, especially for the lack of

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[14] www.bsi.bund.de/english/themes/egov/6_en.htm

approval of an e-Government project for the city of Dar es Salaam as a whole.

The phases one and the first activity of phase two could be applied to the whole city of Dar es Salaam, as made up of the four independent local authorities City Council, Kinondoni, Ilala and Temeke Municipalities, while for phase three the activities of the different departments had to be analysed in detail. According to the priorities determined in the previous two phases, one particular online-capable service had been selected and analysed. Phase four and phase six will be implemented by the e-Government team, created on the previous phases.
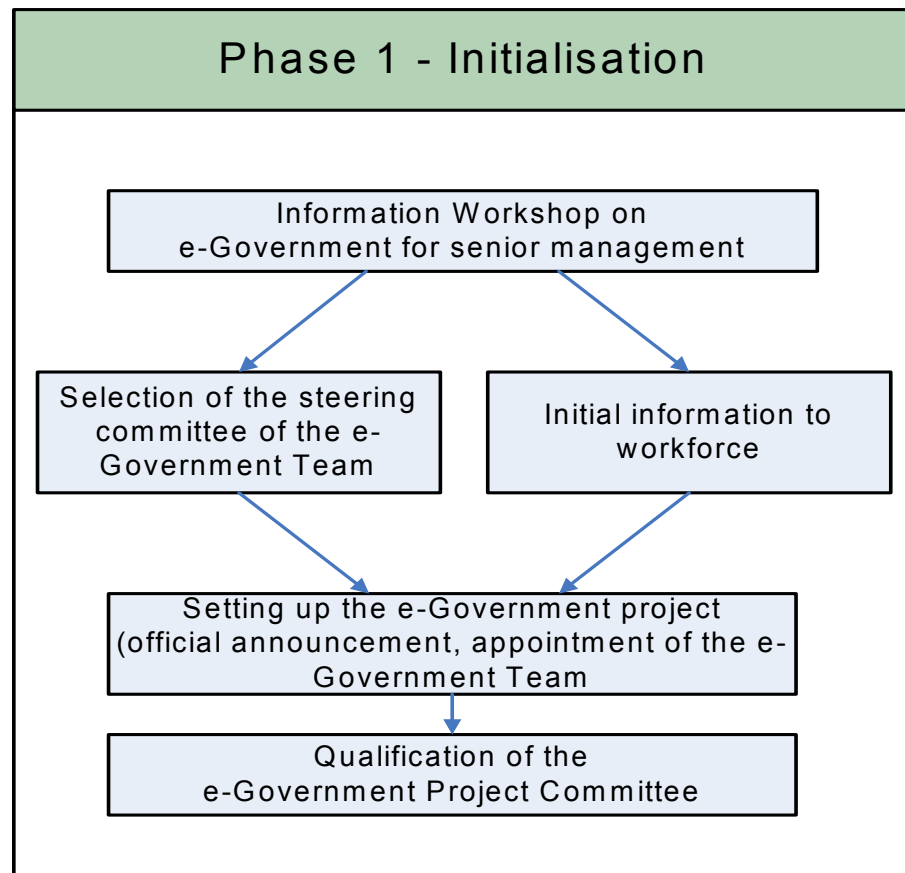
3.2.1 PHASE 1: INITIALISATION.

Figure 8: Phase 1 - Initialisation

The first phase describes how to initiate the e-Government project (figure 8). An e-Government Team is set up for this purpose and qualified for the project. The workforce should be briefed.

How the Recommendations of the e-Government Handbook have been adapted for the Case Study:

- Since there is no work council in the public administration, the activity "information to the work council" has been replaced to the activity "information to the workforce".

- As mentioned in the preface, it had not been possible to obtain the official approval and founding for the e-Government project from decision makers, as such the task "setting up the e-Government project, official announcement, appointment of the e-Government team" could not be completed and from that activity the author had to adapt the framework to the real situation.

3.2.2 PHASE 2: STRATEGY.

The review conducted in Phase 2 (figure 9) is almost exclusively organisational in nature and involves the use of the corresponding tools while Phase 3 requires the step-by-step development of an IT replication of the workflows.

The central task in Phase 2 is to identify and assess the online-capable services, bearing in mind the public agency's objectives regarding e-Government. It is decided which of these services should be implemented.
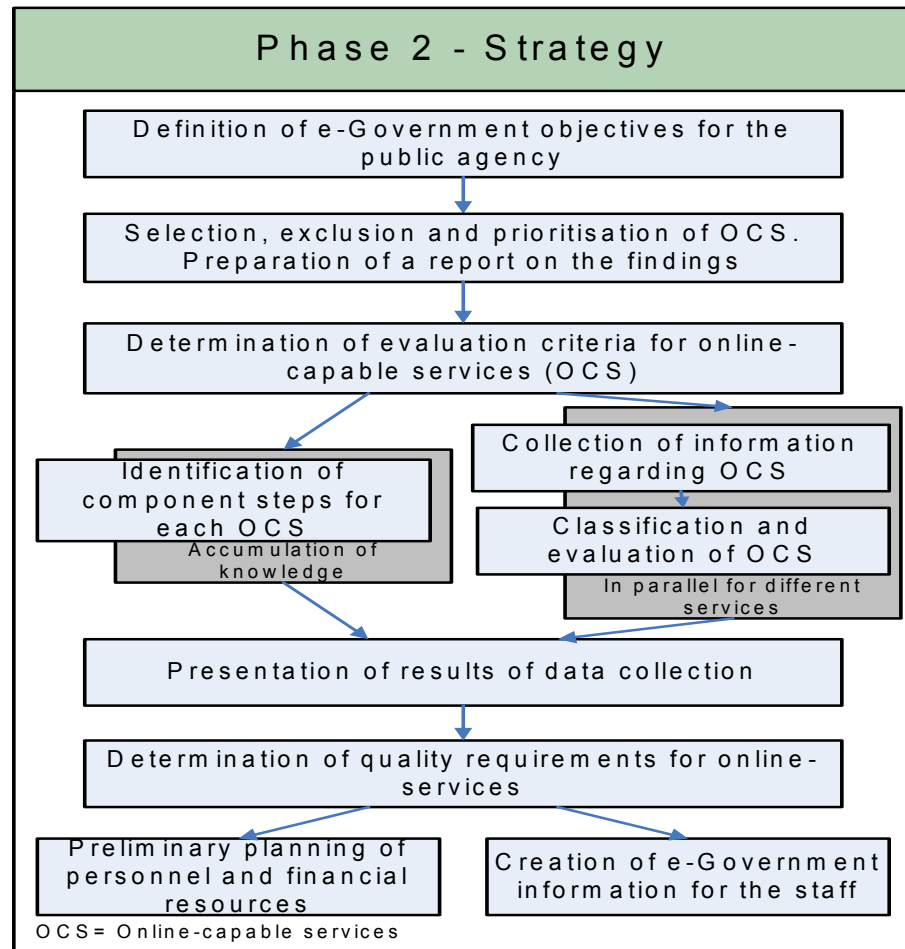
Figure 9: Phase 2 - Strategy

How the Recommendations of the e-Government Handbook have been adapted for the Case Study:

- To save time the author proceeded with many activities in parallel
- This phase was recommended to be applied to each department involved in the e-Government project. This has been done in this study for the interviewed departments. In addition to that, it has been deemed useful to work out a strategy for the whole city of Dar es Salaam. For this reason the first activity "Definition of the e-Government objectives for the public agency" has been answered by

the e-Government team with consideration of the whole city including all four local authorities.

The reason of this elaboration is to utilise the results in support the future approval of the e-Government project.

- The activity "Selection, exclusion and prioritisation of online-capable services, preparation of a report of the findings", which was suggested to be at the end of the phase, in the case study has been anticipated to be at the beginning, especially for the purpose of saving time. The further analysis was carried on only for critical online-capable services. The head of each department has been interviewed and he/she gave information only for the one online-capable service which he/she deemed the most important to be developed in his department.

This change has allowed to make the completion of questionnaires less time-consuming, increasing the responsibility of the interviewees, which made possible to get a much wider view of the needs covering all the functional departments in Dar es Salaam. This advantage has been reached without loss of information, since there is still a limited capacity to implement e-Government projects. The implementation of the most needed service for each department would already be a significant improvement.

3.2.3 PHASE 3: ANALYSIS.

The services identified in Phase 2 are investigated in more detail. Both the protection requirement for individual sets of data and the resulting security requirements are determined, while the processes underlying the service are investigated and opportunities for optimisation are identified.
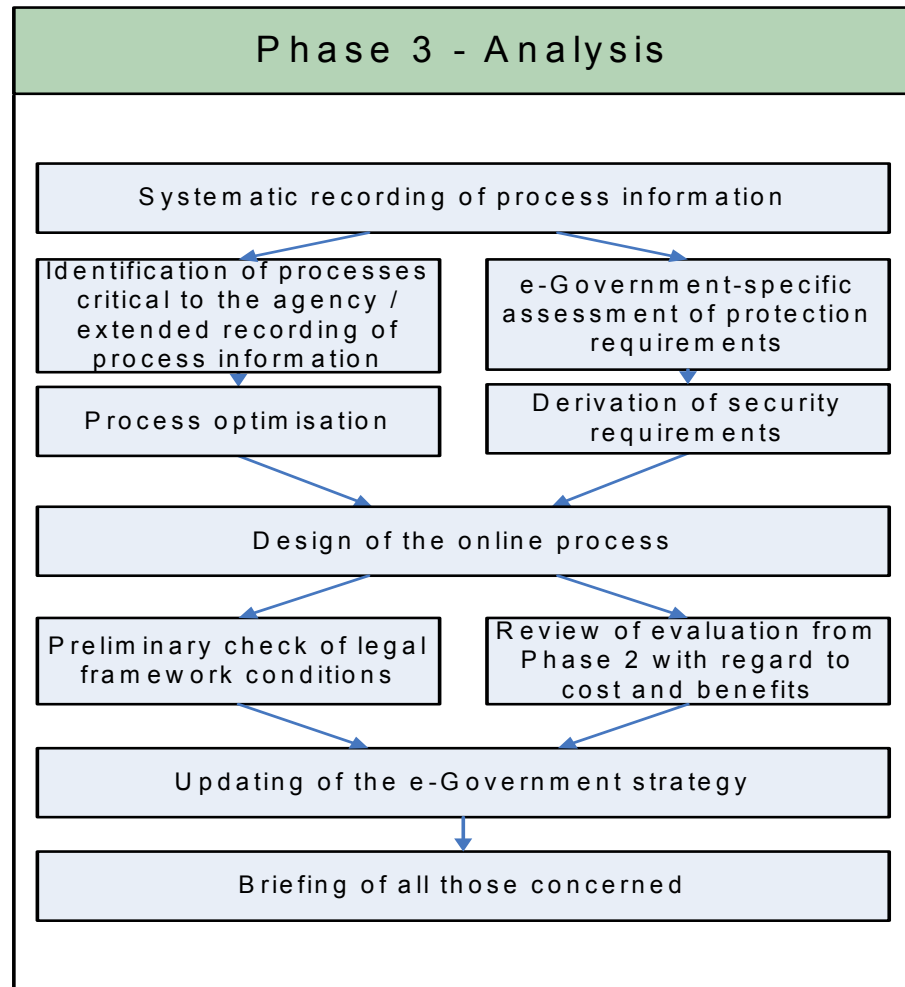
Figure 10: Phase 3 - Analysis

Phase 3 consists of a systematic process analysis, during which the online-capable services are first subdivided into sub-processes at activity level and then combined into groups with identical activity content (e.g. advising, checking, analysing, researching, decision-making). The sequence and logical links between these sub-processes are then visualised in the form of flow diagrams. In particular, the input and output of each sub-process is identified.

The output from Phase 3 is a high-level technical concept for all the online services that the public agency intends to offer within the e-Government framework..

3.2.4 PHASE 4: HIGH-LEVEL DESIGN.

The information technology resources necessary to supply the e-Government services are determined, taking into account present circumstances and any possible externally usable platforms. In parallel to this, existing IT security concepts are expanded or rewritten.
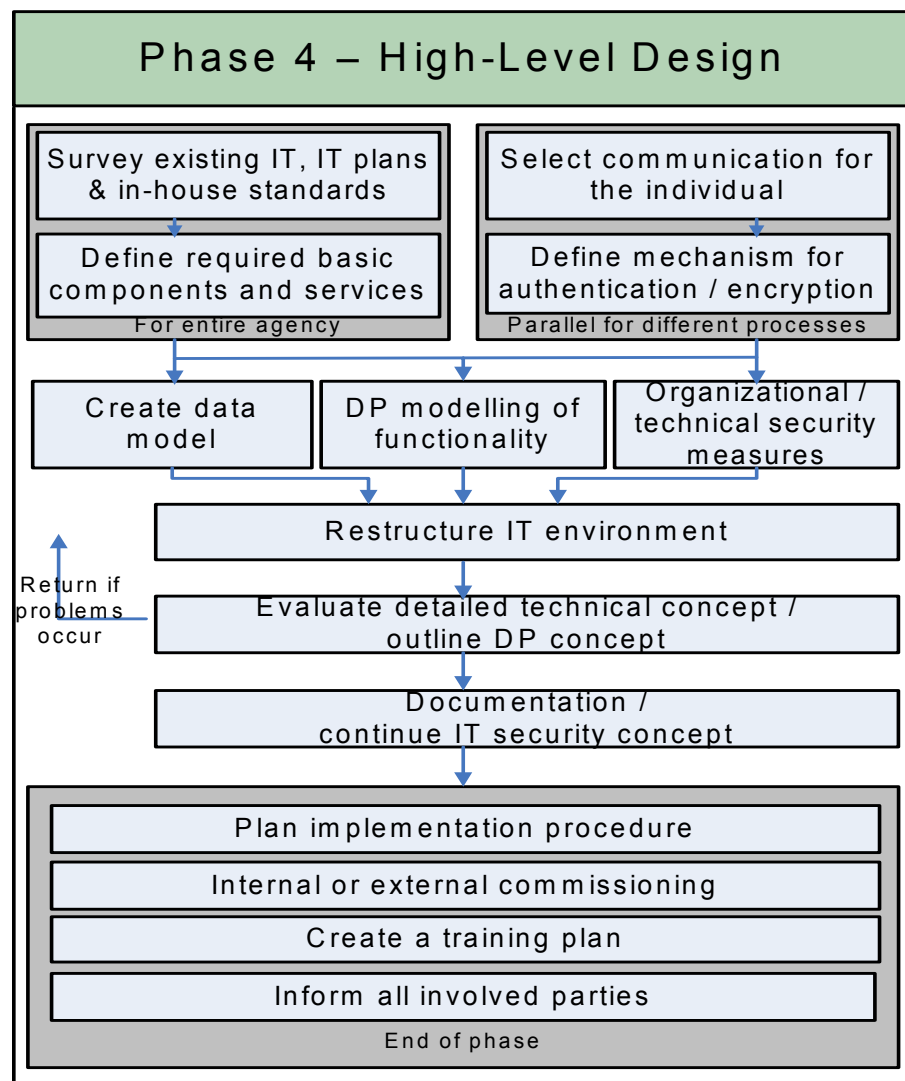

Figure 11: Phase 4 – High-level design

Phase 4 encompasses the step-by-step development of the detailed technical concept for the projected e-Government services. Here it is necessary to further subdivide the sub-processes of an e-Government service – identified within a task-related, organisational perspective in Phase 3 – until a level of detail is reached that can be directly transferred to the technical IT solution. This demands a detailed description of all the application's functions and their interactions within the framework of an e-Government procedure. Moreover, it is necessary to define and describe in detail the interfaces between the processes.
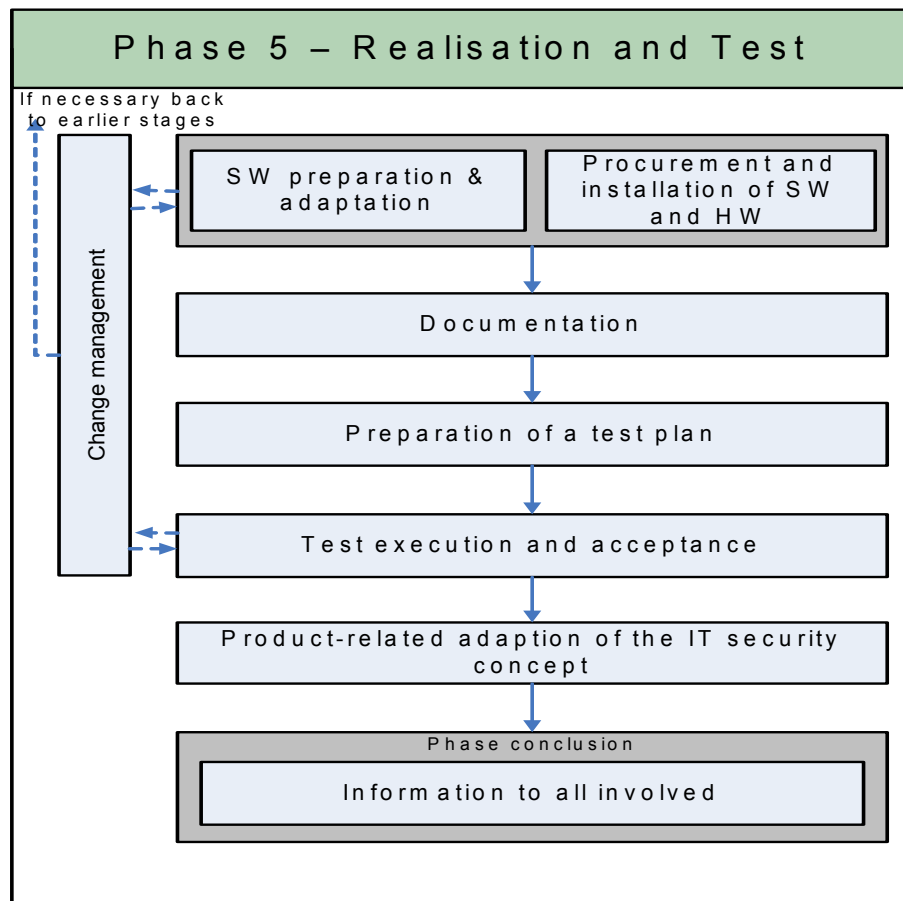
3.2.5 PHASE 5: REALISATION AND TEST.

Figure 12: Phase 5 – Realisation and test

The necessary hardware is procured and installed according to the priorities that have been assigned. The software that is necessary is purchased or created and modified to the specific circumstances. The new components are integrated in accordance with the IT security concept. In addition, the necessary staff qualification measures are carried out.

3.2.6 PHASE 6: IMPLEMENTATION AND INITIAL OPERATION.

After successful completion of the necessary functional tests, an IT security audit and pilot operation, the new on-line services are gradually put into operation. The implementation is accompanied by PR and marketing campaigns.
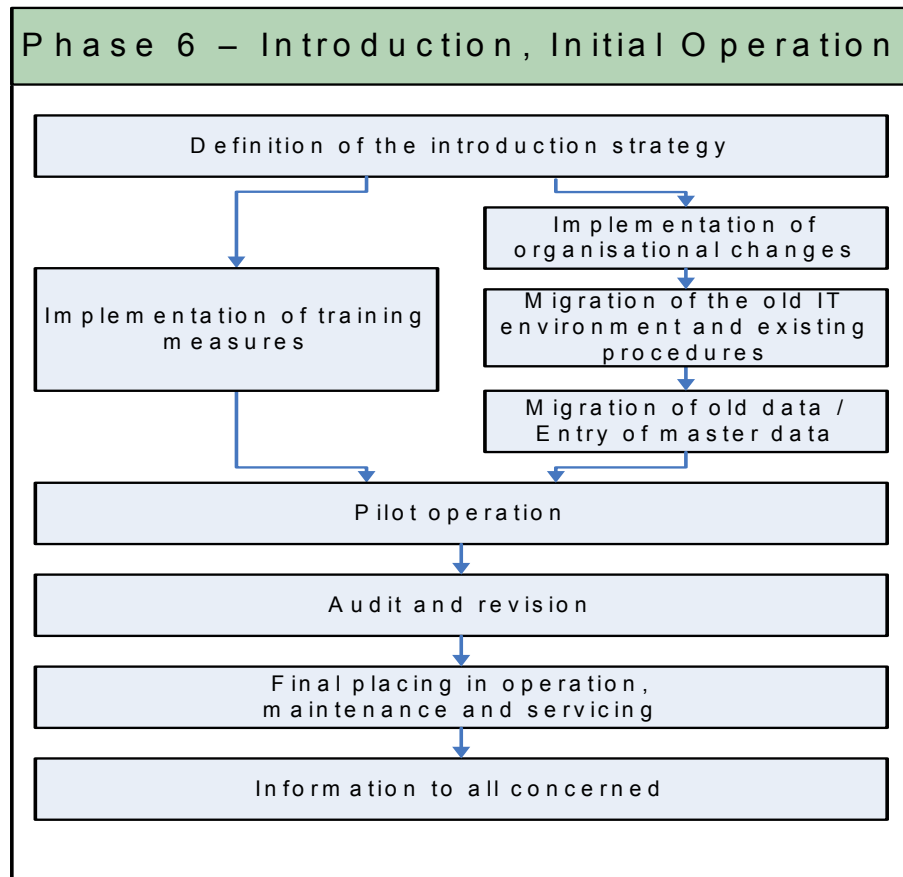
Figure 13: Phase 6 – Introduction and initial operation