Open source software migration: Best practices

O MOLEFE, T FOGWILL, A GERBER AND A VAN DER MERWE
CSIR Meraka Institute, PO Box 395, Pretoria, 0001, South Africa
Email: omolefe@csir.co.za – www.csir.co.za

INTRODUCTION

Open source software (OSS) has gained prominence worldwide, largely due to cost savings and security considerations. This has caused a change in the IT sector and has led to the migration of desktops from proprietary to OSS. The problem for organisations wanting to adopt OSS is the difficulty in planning and implementation of migration projects, with migration processes often being designed from scratch.

Process reference models (PRMs) are reusable process model structures. They capture the common activities, roles and resources of processes in a particular environment and can be reused in different environments. One of the advantages of PRMs is that they enable *Design by Reuse*, alleviating the need to redesign processes.

PRMs can improve the planning and execution of OSS projects. To develop PRMs for OSS migration projects, the CSIR OSS migration project (Vula) was studied, and its process models were captured using the standard process notation IDEF0. This was done using the five phases of the approach of van der Merwe and Kotzé (2008), depicted in **Figure 1**.

During the first three phases, the process models for Vula were identified. From these, the generic process models were extracted (phase 4). The verification of the extracted process models (phase 5) remains as future work.
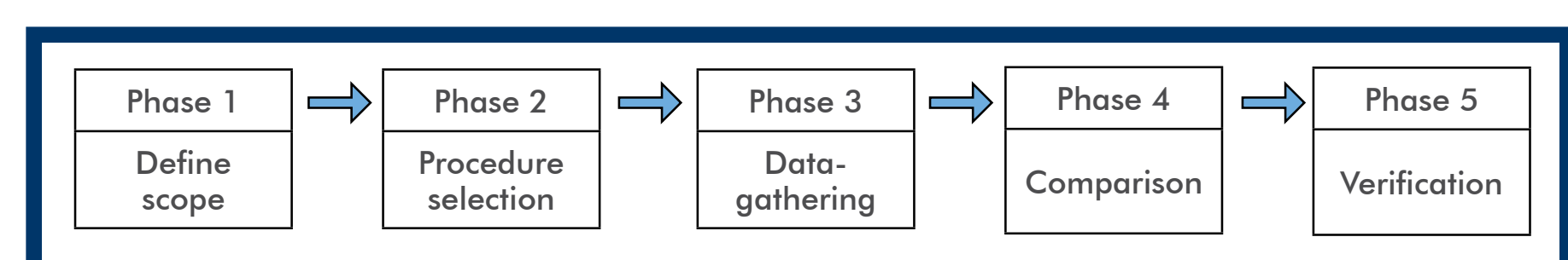

Figure 1: Approach adapted from Van der Merwe and Kotzé (2008)

OSS MIGRATION PROCESS MODEL

Throughout the lifespan of Vula, formal and informal interviews (pre-migration and post-migration) with the Vula team and other CSIR employees were used to identify and capture process models. Initially, a high-level process diagram was developed. This parent diagram was later decomposed into child diagrams representing the detailed sub-processes of the process model.

The high-level process model diagram is presented in **Figure 2.1**. The diagram indicates how an output of one process becomes an input of another. It is possible for a process to have more than one output, and it is possible for detailed, refined processes to have no input. Each process has its own goal.
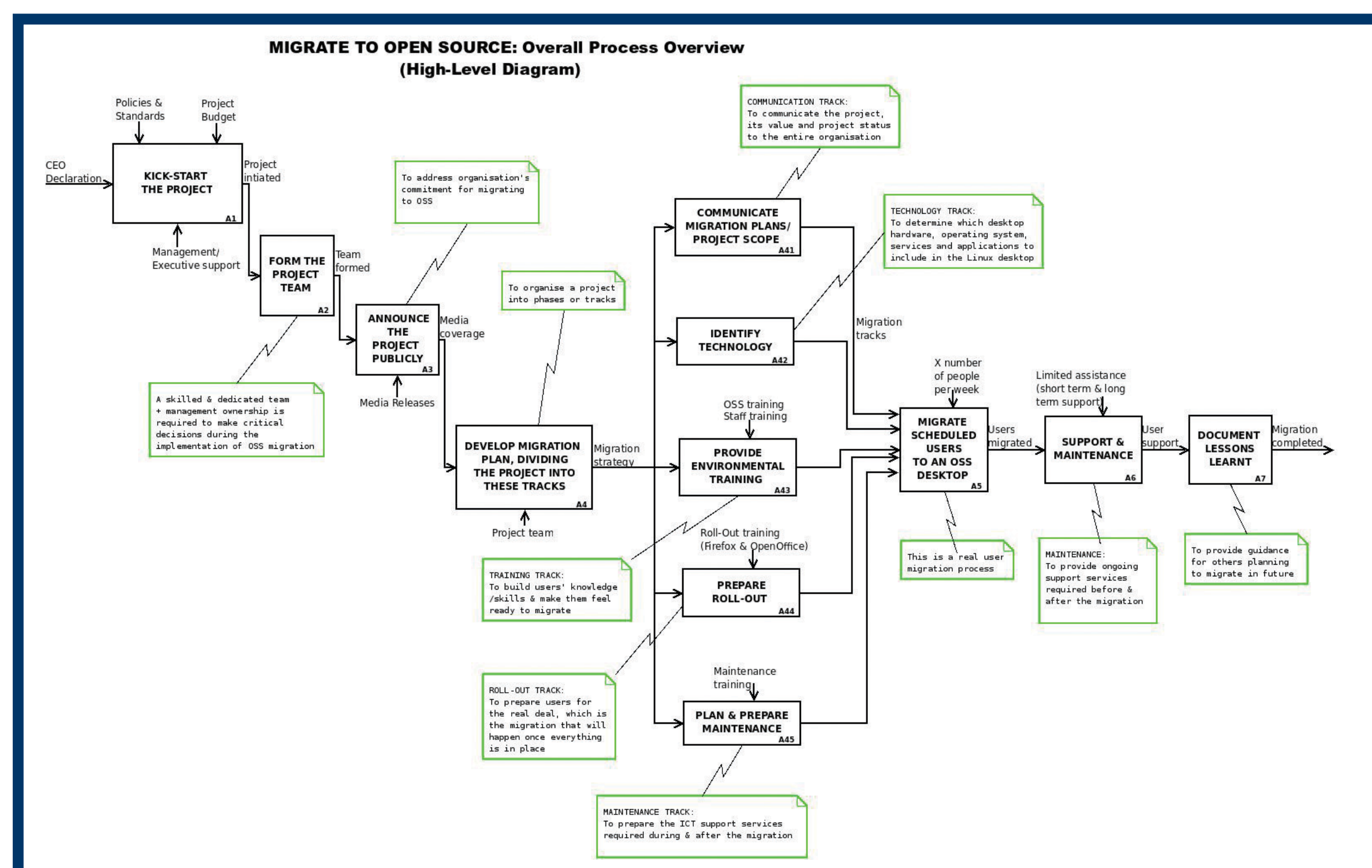

Figure 2.1: OSS migration high-level process model diagram

The high-level process model was analysed to extract PRMs, using the following criteria:

- PRMs have clearly-defined context, goals and results
- PRMs are complete
- PRMs are generic to migration projects
- PRMs are reusable within other contexts to achieve the same result.

The extracted high-level PRMs are depicted in **Figure 2.2**. The PRMs are displayed in red, whereas those that do not form part of the reference model are blue.
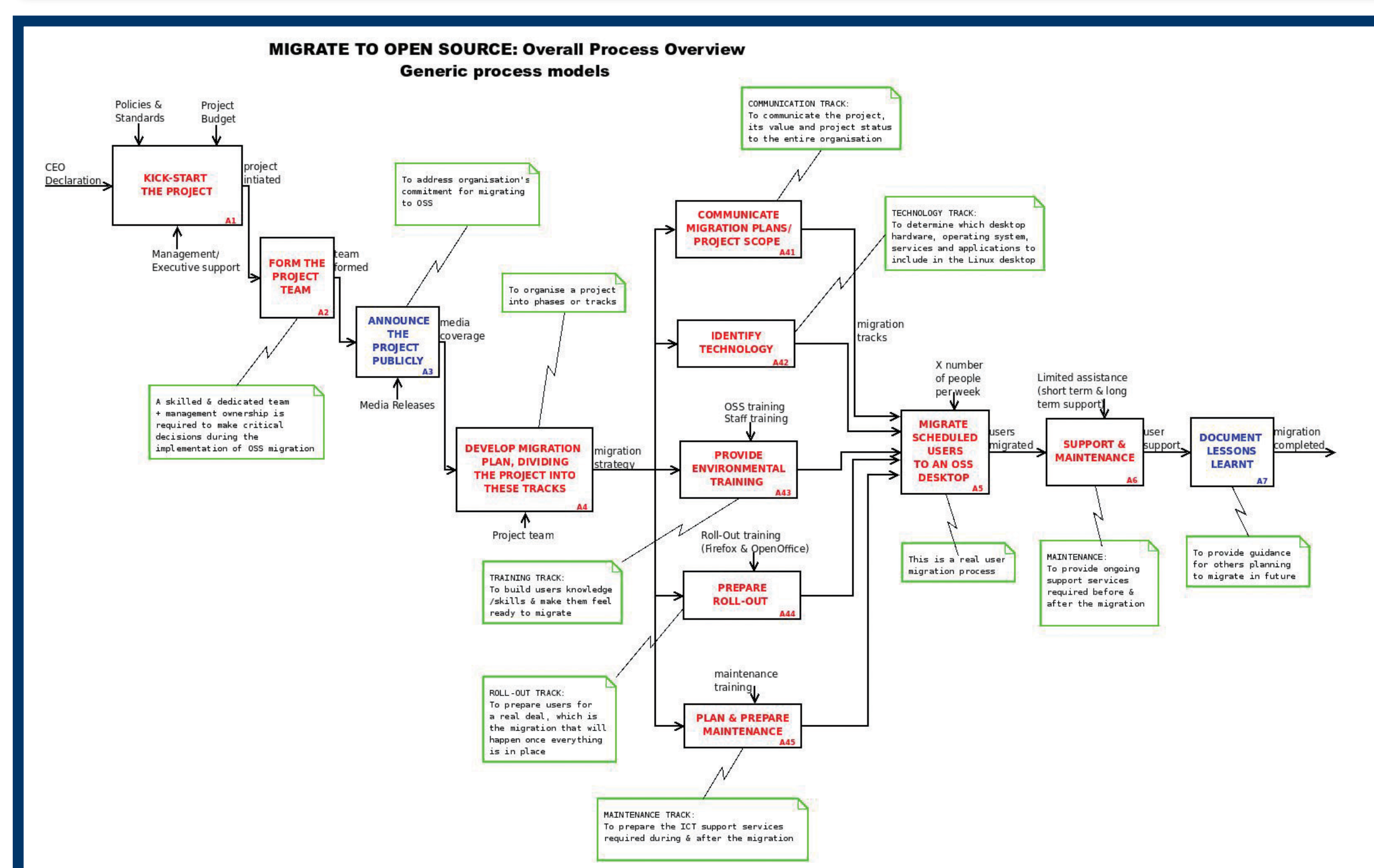
Figure 2.2: OSS migration process reference models

For illustrative purposes, this paper presents only the high-level process diagrams - the lower-level process models are available at http://to-be-determined/generic-process-models-4-os-migration.

CONCLUSION

The study made two contributions: It identified OSS migration process models for a specific project, and from these it extracted a set of PRMs.

It is strongly believed that these PRMs can guide future OSS migration projects. However, verification of their general appropriateness remains a task for further research.

PRMs for OSS migrations describe reusable processes and are a way to enable better planning and easier execution for future OSS migration projects.