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PROGRAM MANAGEMENT CAPABILITY ASSESSMENT: THE CASE OF PRORAIL IN THE NETHERLANDS

González Gómez, Victoria ⁽¹⁾; Ordieres Meré, Joaquin ⁽¹⁾; Hetemi, Ermal ⁽²⁾

⁽¹⁾ Escuela Técnica Superior de Ingenieros Industriales - Universidad Politécnica de Madrid, ⁽²⁾ KTH Royal Institute Of Technology

Project-based organizations focus on executing a large amount of projects, often simultaneously, where different resources and stakeholders interact in the process. This kind of organizational structure is often complex and problematic to manage, as program managers have to deal with several projects simultaneously, which by definition are activities with their own logic and limitations in scope and time.

The study aims to assist ProRail on enhancing its Program Management Capability, by identifying the main sources of conflicts present in its Program Management structures, and creating a set of constructive suggestions in order to cope with the problems identified.

- How does ProRail currently govern and manage its programs?
- What are the main advantages and disadvantages of Program Management? What are the main sources of tensions and conflicts presents when managing programs in project-based organizations?
- How can ProRail enhance program management capability in this specific context, so to respond innovatively to unexpected risks and events?

Case studies were chosen as the most valuable approach to answer the research questions. The main findings were presented in the 22nd International Congress on Project Management and Engineering, held by the Spanish Project Management and Engineering Association (AEIPRO).

Keywords: *program management; project complexity; organizational design*

EVALUACIÓN DEL MODELO DE GESTIÓN DE PROGRAMAS: EL CASO DE PRORAIL EN LOS PAÍSES BAJOS

Las organizaciones gestionan proyectos de forma simultánea, donde diferentes recursos y grupos de interés interaccionan en el proceso. Esta clase de estructura organizativa es compleja y difícil de gestionar, ya que han de gestionarse diferentes proyectos de forma simultánea que, por definición, son actividades con su propia lógica y limitaciones temporales y de alcance.

El objetivo de este estudio es identificar las principales fuentes de conflictos presentes en una organización que gestiona programas en su estructura, para así crear una serie de sugerencias que puedan ayudar a la empresa a mejorar su gestión de programas. El estudio se realizó en ProRail, empresa encargada de la gestión y mantenimiento de la infraestructura ferroviaria en los Países Bajos. La metodología se basó en el estudio de casos y responde a:

- ¿Cómo gestiona actualmente ProRail sus programas?
- ¿Cuáles son las principales ventajas e inconvenientes de la gestión de programas en entornos organizativos, y cuáles son las fuentes de tensión más comunes en organizaciones que gestionan programas?
- ¿Cómo puede ProRail mejorar la metodología de gestión en sus programas?

Los principales resultados del estudio fueron presentados en la XXII edición del Congreso Internacional de Dirección e Ingeniería de Proyectos organizado por AEIPRO.

Palabras clave: *gestión de programas; diseño organizativo; complejidad; tensiones proyecto-programa*

Correspondencia: victoriagonzalg@gmail.com

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1. Introduction

The extensive use of projects and the professionalization of the practice of Project Management through all kinds of organizations have brought a perceived need to coordinate and balance different projects within an organization (Pellegrinelli, 2011). Firms share resources, plans, times and tools that, if effectively coordinated and treated, can transform into business benefits.

Program Management arises as an answer to this problematic, as it can be considered one form of multi-project organizing that is usually established to achieve certain strategic benefits through organizing and managing changes in the organization. By managing programs, coordination of projects is achieved, as well as efficiently allocating resources of the organization along the portfolio. Program Management is conceived as a managerial tool for the organization to achieve strategic goals when managing different projects, presenting different advantages, highlighting the consecution of benefits that could not have been achieved when managing projects separately (Pellegrinelli, 2011).

A program set up has relevant benefits for an organization. It is logical to ask about the existing disadvantages of merging and organizing projects into programs. Relatively little is known about the topic, and that is one of the main reasons why this study is performed, as it will provide some insights into first hand program management in an infrastructure company.

The program scenario may be too bureaucratic and impose too many constraints on the process. There could be a situation in which, rather than assisting the process and project goals, the program structure might be halting and slowing down the projects carried out by an organization.

Table 1. Benefits and drawbacks of program management

BENEFITS OF PROGRAM MANAGEMENT	DRAWBACKS, RISKS & POSSIBLE OUTCOMES
Comprehensive and clear overview of all the active projects	The holistic view may become too vague in programs with a large amount of projects
Benefits obtained could not have been achieved when managing projects separately	Some project goals may interfere with other project or even program goals, causing tensions
Emerges by nature, allowing room for changes	A program set may be too bureaucratic and impose too many constraints, provoking the opposite effect
Early identification and consequent escalation and resolution of issues	The excessive number of layers for solving a problem may slow down the process
Early identification and/or forecasting of resource conflicts	Ineffective Program Management resource allocation may result in bad performance for certain projects and tensions between projects or projects-program
Consistency of approach, management and reporting	This consistency might be inexistent or hard to attain in the company
Network coordinating	The large amount of stakeholders in need for coordination may slow down the project process
Facilitator and instrument for change and flexibility	Excessive layers may slow down the process of change

When interfaces between the program and interrelated projects are not managed accurately, the program could not be controlling the projects as it should. At the same time, if the different projects use different methodologies for managing their projects, the program management level finds it difficult to gather and interpret the information, besides the extra time and effort. Inconsistency between different projects of the same program can play a significant role in the program evolution and performance. Therefore, all the previous benefits are present if program standards are properly implemented.

1.1 Program and projects: sources of tensions

A critical dimension of Program Management is the existing relation of the program, and the projects involved. Different organizational logic or principles, process-based sources of tensions, access to critical resources, learning boundaries, identity and team dimension and the relationship between the organization and the external environment are most important sources of tensions present in project based organizations (Arvidsson, 2009).

Decentralization of procedures, lack of integrated planning, bifurcation of authority, lack or unclear communications between figures of the program and projects are also considerable tensions to take into account. Other sources of tensions in projects that have been well studied in the past show that tensions are a product of the precursors of complexity, uncertainty and equivocality, and an attempt is made to characterize tension as it arises in projects – its genesis, its nature, its effects and, sometimes, its resolution (Wilson & Burström, 2016).

The interest is to understand the sources of tensions on the dynamic interplay among project and program forces, based on the information provided by literature, helping on realizing the distance between the research outcomes and the practical implementation for the particular case of the infrastructure sector.

2. Goal statement

The outcome of this research is developing a Program Management Capability Assessment Model to assist ProRail management in enhancing its program management capability, as well as creating an understanding of the organizational barriers for the model's implementation.

2.1 Research goals

At the end of the research, answers to the following questions will be addressed:

- How does ProRail currently govern and manage its programs?
- What are the main advantages and disadvantages of Program Management in organizational environments? What are the main sources of tensions and conflicts presents when managing programs in project-based organizations?
- How can ProRail enhance program management capability in this specific context, so to respond innovatively to unexpected risks and events?

3. Methodology of the research

A case study allows explorative research and the possibility of analysing qualitative data for gaining insight into complex social processes (Flyvbjerg, 2004). It provides direct observation to the process of interest, as it aims to gain detailed and contextual knowledge of complex governance processes (Buuren, Buijs and Teisman, 2010).

An inductive approach is particularly suitable for program management competence (Miterev, Engwall and Jerbrant, 2016) and relatively little is known about the coevolution between project and program management, and certainly not in the context of spatial planning (Buuren, Buijs and Teisman, 2010).

The cases were selected as they best reflect the requirements needed for building theory from interviews. The inductive way of conducting the research aimed to help both the organization and the study into exploring challenges of current program management strategies.

3.1 Case studies in ProRail

ProRail B.V. is the main responsible for the construction, maintenance, management and safety of the railway network in The Netherlands. It is a government task organization that takes care of existing rails and tracks along the country (ProRail, 2018). From all the projects the railway network managed by ProRail comprises, the study will focus in the infrastructural facilities that constitute part of the main railway network, considering two main programs: Stations Accessibility Program and Bicycle Facilities Program.

The “Stations Accessibility Program” (SAP) develops measures required to improve the accessibility of rail transport for passengers with a physical disability, focusing on the accessibility of existing stations. This program coordinates three projects in parallel:

- Platform Heights Project, the project with the biggest scope within the program. This project aims to assist individuals in getting into any train without platforms. The platform needs to be at a specific height – 76 cm – above the rail track, which requires the adjustment of all platforms present in the network.
- Step Free Station Project: this projects aims to assist individuals in reaching every part of the station by means of elevators and ramps. Despite the majority of the stations already had elevators, this project turned out to be one of the most complicated, challenging and difficult to manage, since it directly affects the commercial area of the stations, property of NS, the operator of the network.
- Small Measures Project: this project aims to help disabled people into reaching their destinations through the stations. The Small Measures Project is already finished.

In early meetings with program members, these projects were referred to as “sub-programs”, meaning project each subprogram that is developed in a determined station.

The second case study was framed in the “Bicycle Parking Program” (BP), part of the Stations Division as well, within the Projects Department of the organization. This program aims to provide stations with specific installations for parking bikes. The main difference from SAP is that in BP the sub-program layer is eliminated, or at least not treated according to the asset. Each project manager is, indeed, managing different projects at the same time, but the scope is the same, or stations are different. There is no situation in this program in which two project teams are interfering or working in the same station.

3.2 Data collection

The data gathering process was achieved by spending days at ProRail headquarters in Utrecht, at least one day per week, during six weeks. Another important source of data was project documentation regarding internal methodologies, project steering and project evaluation information. A confidentiality agreement was signed.

In total 12 interviews were conducted for drawing conclusions from the empirical data. All of them were recorded and a transcript was sent to the interviewed in order to gain consent. In addition, procedures, managerial reports, national reports and different documentation relating to the programs was reviewed.

Table 2. Data collection from interviews

Program #	Interviews with Program Manager	Interviews with Program Team Member	Participant Observation	Document Analysis	Informal Communication
Stations Accessibility Program - SAP	2	6	+	+	+
Bicycle Parking Program - BP	1	3		+	+

The organization allowed re-scheduling interviews, repeating meetings and changing the agenda during the period of the study. Every member of both programs examined presented a positive attitude about the interviews, sharing resources and time.

All interviews followed the same structure with different focal areas dependent on the role of the respondents:

- Introduction: and functions: in this section, candidates were asked about the program and their contribution, how the program was organized, and daily activities.
- Dynamics between program and projects: this section of the interview mainly focused in finding if there was a formal description of Program Management in the company, as well as figuring out the relation between the different layers or levels that are present in the program: reporting procedures, contact, key performance indicators (KPIs) of both program and project.
- Decision making process in program and project levels: every candidate was asked how the decision making process worked, from his/her point of view, especially in the allocation of resources, client requests and change management.
- Most common conflicts and failures: this section focused on gathering information about the common problems that the candidate faced at work, as classifying the source of the conflict.
- Room for improvement, for obtaining recommendations on the conflicts described.

Table 3. Overview of different roles of interviewees

Role	Program	Description	Remarks
Program Manager	SAP	Program Manager of Stations Accessibility Program, divided into three subprograms depending on category of asset constructed and also divided in project within the subprogram, regarding the specific station	Double role: also project manager of a category of subprogram
Project Manager	SAP	Project Manager of Platform Heights	Project manager of the project with the bigger scope within the program. One year performing the role
Program Manager Assistant	SAP	Program Manager Assistant, supporting the Program Manager	Double role: also assistant at a project level
Program Controller	SAP and BP	Supervisor of program risk analyst, planner and financial controller	Double role: the program controller plays the same role in both programs examined
Planner	SAP	Planning the program, subprograms and projects	Triple role: interesting role due to his broad view of the program
Risk Analyst	SAP	Risk analyst of the program and three subprograms	Triple role: interesting role due to his broad view of the program
Project Manager Assistant	SAP	Project Manager Assistant of Project Manager of Platform Heights: biggest scope	Taking part in the program since its beginning
Program Manager	BP	Program Manager of Bicycle Parking Program	Previously performing the role of Project Manager
Program Manager Assistant	BP	Program Manager Assistant, supporting the Program Manager	In the program since its beginning
Project Manager	BP	Project Manager of all actions taking place in the Bicycle Parking Program	Interesting role as this program is not divided into subprograms, and the program layer directly continues into project location

4. Results obtained

This section aims to show the structuration process of the collected data, in order to gain insights to the company and draw conclusions for the study.

4.1 Preliminary findings from SAP and BP

A first meeting was arranged with the Stations Accessibility Program Manager to gain insights about the programs, especially regarding organizational structure and shared human resources. The SAP shares the planner and risk analyst at both sub-program and program level. This could have been done as a way of reaching standardization. In addition, the shared program and sub-program manager previously mentioned could suggest that the program position is not very exigent in this case and therefore could be done by a project manager. In BP, the structure of the program has changed over the past decades and it still lacks human resources to fulfil the organizational structure planned.

Regarding subcontracting services, is apparently common through the organization that, since the program interacts with other programs belonging to Stations Project Division, the adjustments that need to be done in each project are subcontracted to ProRail employees from other project currently running at the station. These horizontal contracts are perceived as a way of gaining efficiency within the organization, especially from the strategic goal of ProRail of minimizing disturbance to passengers.

Table 4. Main differences between SAP and BP

Program #	Stakeholder management	Standardized program practices given from the organization	Criteria for organizing projects within the program	Subcontracting scope to ProRail colleagues	Shared Human Resources between layers	ProRail as an owner of facilities	Lessons learnt from previous conflicts/problems/mistakes
Stations Accessibility Program - SAP	At a Program Level	Separate kern-process for each sub-program	Only according to technical requirements	Frequent	Yes	No	They are aware of the problem but no measures have been made
Bicycle Parking Program - BP	Both Program and Project levels	A particular* Kern-process for the overall program <small>*The standard ProRail kern process has been adapted.</small>	According to scope, region and PM in charge	Frequent	No, previously they did	Sometimes <small>* Depending on local stakeholders and NS</small>	They recognize the problem and have found a specific solution to cope with it

4.2 Results obtained

Program Management is intended to cope with the required flexibility of project-based initiatives, being a framework for coordinating and achieving major strategic goals. With this program conception, ProRail loses its chance for an effective Program Management according to the standards. ProRail perceives the company as implementing “program goes first” approach, but fails on realizing their main goal: integration. ProRail is managing the program as a coordination of different projects, while program management is not just a scaled up vision of projects.

The program deadline plays a major role in this sense as well since employees are fully aware of the situation but solving these problems seem to be less relevant than speeding up project implementation processes (Buuren, Buijs and Teisman, 2010). The Stations Accessibility Program’s projects are executed only with the view of accessibility, and stations are much more than that, the strategic goal is missing.

Both case studies showed how the evaluated programs were “single-objective” model (Buuren, Buijs and Teisman, 2010) and while its attempt is to shape projects from a joint interest, the grouping interest that the organization calls “joint interest” is the same as if it

was managing the projects separately, and integration from other departments is missed, especially Asset Management - Maintenance. The following paragraphs will focus on matching different tensions appreciated in the interviews with the ones found in literature, as well as providing an insight to the main difficulties programs studied in ProRail are facing nowadays:

- **Different organizational logic or principles and process based source of tensions.** This type of tension arises when roles and responsibilities are not clear in a program setting. In this specific case, there is no governance guide for Program Management in ProRail, which hardly helps to consolidate best practices through the organization. “There are no standards for Program Management, I had to figure it out myself.” (quote from Program Manager)
- **Learning boundaries.** If the planning team sees the opportunity for several works to be done in a station and, another project (or program) is taking place at that station, it contracts this service to the other team in the company. Each sub-program participates in the design requirements for the station separately, and hands it over to the contractor. “They don’t know what accessible means”. (quote from Program Manager)
- **Identity and team dimension.** Interface management is perceived to be creating a large amount of conflicts within the program, especially between two sub-programs: Platform Heights and Step Free. “We were trying to level the platform on a certain height compared to the train tracks, so you can step easily. But we also have to put the elevator in place. There is no management of this technical issue.” (Quote from Project Manager)
- **Relationship between organization and external environment.** The interface between subprograms and projects of one program is hard to manage, especially because the Platform Heights requires approval from NS (operator of the infrastructure) fourteen months prior to the works, as trains will not be accessible in between works, and the Step Free requires negotiations with NS (also owner of the stations), and sometimes the planning is affected by this issue. “As a Program Manager speaking with stakeholders, you want to resolve issues, and there is a limited view” (Quote from Program Manager)
- **Decentralization of procedures.** There is a recognized lack of Program Management procedures in the organization and every sub-program and project uses its own methodology. Despite having standards for Project Management, responsibilities are not clear and basically the procedures of program management are scaled up to projects: “When I stepped in, I noticed that procedures being followed was not happening.” (Quote from Program Controller)
- **Lack of integrated planning.** Planning figures in both programs studied have revealed how difficult it is sometimes to develop an integrated planning, taking into account all the individual projects’ planning horizons, that is useful for the organization. “To be useful at a program level maybe we have to add one or two items extra (...) and that way of thinking, that program has more dimensions than projects, has to be thought in advance, to have some effective benefits.” (Quote from Program Planner)
- **Lack of communication.** ProRail is struggling with the integration of information within the program. There is a major risk of not everyone having the same picture of the project. Throughput times are faster if information flows quickly, but not sufficient contact points are present: “We have no people producing things outside when it comes to projects. We are a communicative and informative organization ourselves, and that is what we need to organise good.” (Quote from Program Controller)
- **Bifurcation of authority.** Program managers are reluctantly accepted as long as they do not really interfere with project implementation (Buuren, Buijs and Teisman, 2010).

The multiple role character was intended to gain standardization, as it was perceived that the more people placed in the layered program structure, the bigger the communication issue would be. However, what happens if the program manager and the project manager are the same person? Candidates perceived horizontal tensions and conflicts between sub-programs due to this issue, called multiple role conflict. "They are different roles but the fact that is the same person it is also unclear when this person is talking, is it as subprogram manager, or program manager, and that is the risk." (Quote from Project Manager from interview)

4.3 Summary of existing conflicts

Sources of tensions present in the programs have been previously classified according to literature. From this information, most relevant conflicts can be defined:

- Subcontracting services to other teams in ProRail and its consequences. This conflict arises from complexity, unclear communications and decentralization of procedures.
- Management of handovers from realization to maintenance, affecting to program performance. This can be related to the lack of integration, different organizational logic or principles and lack of identity and team dimension previously discussed.
- Multiple role conflict arising due to the different position played by the same person in the organization and the different expectations of the role, as well as horizontal and vertical conflicts between different layers of the program.
- Management of interfaces between sub-programs or between programs in the organization, affecting to program performance.
- Geographical conflict, that also takes place due to horizontal contracts and affects different projects towards the program. The geographical problem is visible in the lack of communication, decentralization of procedures and particularities between the organization and the external environment.
- Integration conflict, present due to the fact that every program uses its own methodology and guidance, and if standardized, it is a scaled-up version of projects procedures.

5. Conclusions

Program Management has significant benefits in project based organizations. However, these benefits are hardly observed and even become an impediment if program structures are not implemented in an accurate way. It is not that the theoretical framework of Program Management is not consistent, only that not everything is put into practice.

The development of the study has shown how ProRail is taking advantage of the benefits of applying a program strategy in its projects, according to Table 5. However, several situations reflect how if the program strategy is not implemented accurately, drawbacks and conflicts can arise. These conflicts are reflected in Table 6.

Table 5. Achievements in ProRail regarding advantages of program management

ADVANTAGES OF PROGRAM MANAGEMENT IN ORGANIZATIONS	Achievements in cases studied in ProRail	Discussion
Comprehensive and clear overview of all the active projects	Yes	Programs studied share different human resources in several positions of the programs studied that provide a holistic view of the context as well as providing benefits for standardization.
Benefits obtained could not have been achieved when managing projects separately.	No	The intention is to achieve this competitive advantage but the implementation is incorrect.
Emerges by nature and allows room for changes.	Yes	Both programs studied have been adapted to clients requirement and society needs, being this last feature most relevant due to the public nature of the client.
Early identification and consequent escalation and resolution of issues.	Yes, but limited*	*In some cases, the horizontal contract and the geographical conflict limits this advantage.
Early identification and/or forecasting of resource conflicts.	No	Horizontal contracts and subcontracting processes in ProRail simplifies and optimizes the project process, but are one of the main causes of this problem.
Consistency of approach, management and reporting.	No	There is a recognized lack of Program Management procedures through the organization.
Clear responsibility for the function.	No	ProRail does not have a guidance about responsibilities in Program Management.
Network coordinating	Yes, but limited*	*Even the ProRail network is not coordinated despite the horizontal contracts are one of the most common procedures between projects or programs in the company.
Facilitator for flexibility and instrument for change	Yes, but limited*	*Flexibility is limited due to the scaled-up vision of Program Management and the nature of the client.

Table 6. Drawbacks of program management found in ProRail

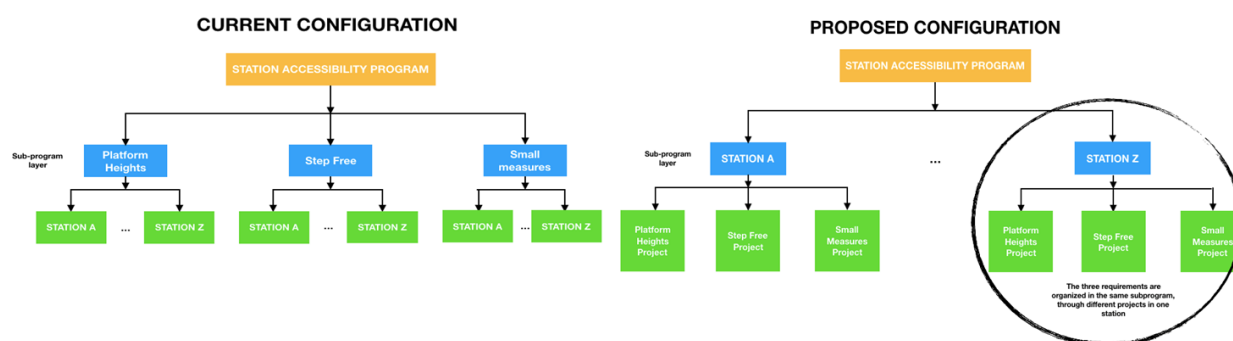
DRAWBACKS OF PROGRAM MANAGEMENT IN PRORAIL CASE STUDY	Found in literature and theory of Program Management	Discussion
Program scenario might be too bureaucratic, imposing too many constraints on the process.	Yes	The public nature of the client, specific regulations and procedures results in an impediment for flexibility.
The holistic view might become too vague in programs with a large amount of projects	Yes	Except certain situations, Program Managers have a comprehensive and clear overview of all the projects, particularly favored by their multiple role.
Some project goals may interfere with other project or program goals, causing tensions	Yes	Specifically in SAP, different subprograms scope interfere between each other, causing tensions.
Ineffective Program Management resource allocation may result in bad performance for certain projects and tensions between projects or project-programs	Yes	Particularly in SAP there are recognized tensions between two subprograms that result in the delaying one project over another.
Excessive number of layers due to separation of projects levels might slow down the process	No	This issue is not present due to the presence of "sub-program units" where the Program Manager is an active part, as a Project Manager.
The large amount of stakeholders in need of coordination may slow down the process	No	Specially in BP, interest groups are not only the Ministry but the operator of the infrastructure, municipalities ...
Inconsistency of procedures may affect both project and program performance	No. Literature takes for granted that implementation is done correctly.	Inconsistency of procedures and tools is affecting the program performance, specially in planning and controlling dimensions.
Treatment of Programs as scaled-up versions of Projects	Yes. It is a recognized risk in literature.	One of the main problems of ProRail that is caused by some of the others: lack of governance guidance, lack of standardized procedures ...

5.1 Recommendations for ProRail

ProRail would find benefits by developing several actions to improve its program management capability:

- **Elaborating a guidance for Program Management** that includes responsibilities and roles, clearly defined. It would be a benefit to develop specific governance rules both at project and program management levels, providing guidance in dealing with aspects like accountability, responsibility, and having impacts on managerial level.
- **Rethinking program structures, from a local point of view.** This proposition includes modifying the conception of “sub-program” based on the asset, changing it to a specific location. In the specific case of the Stations Accessibility Program, the main KPI is having one station accessible, being this only reached if the following three conditions are met: small measures are made for visually impaired, platforms and trains are levelled, and elevators or ramps are present. If sub-programs were divided in stations, all three measures could be done in a station, the three conditions would not interfere with each other, delays could be avoided, and also KPIs for the program level would be obtained earlier. Besides, the nature of the sector implies that several permits and conditions have to be met for major works in a specific station, and this is a relevant cause for delays and interfering projects.

Figure 1. Recommendation for program structures



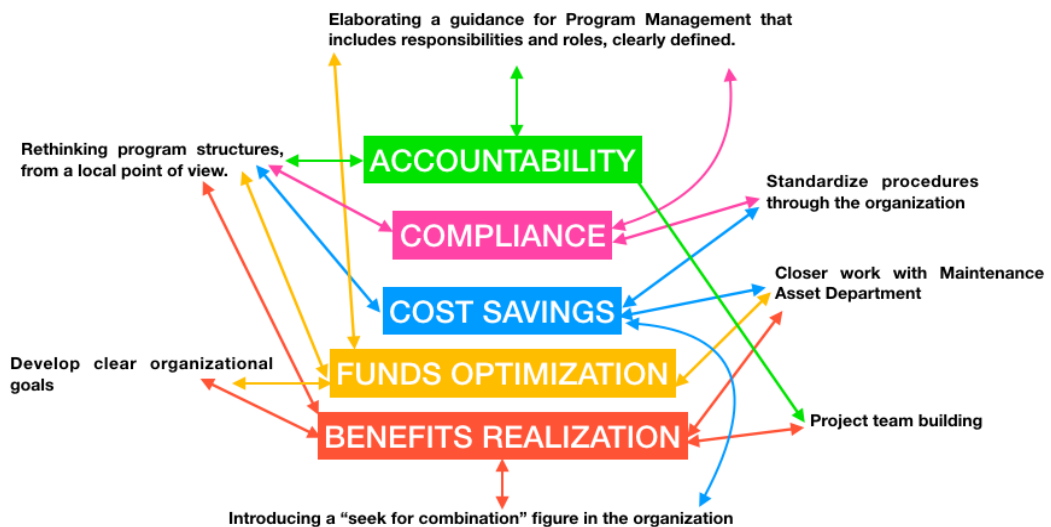
- **Standardization of procedures through the organization.** With the proposal of organizing programs and projects by location, it is crucial that this standardization is respected through the organization. This standardization would reduce a lot of problems that the organization is facing currently, specifically from the planning team. Information would be easier to interpret, as well as the “seek for combination” goal that ProRail is seeking with its works in stations and tracks.
- **Implement specific measures to reduce existing tensions.** In order to reduce tensions, there are different operational tools organizations can use. The lower level is to increase the standardization of the KPIs, by establishing procedures to agree in which KPIs should be used, as well as the formal mechanism to increase their performance (Villalba-Diez and Ordieres-Mere, 2015). When the organization implements both project and programs, specific methodologies for managing them are convenient.
- **Closer work with Maintenance – Asset Management department.** To cope with the separation between Asset Management and Projects department, it could be positive to the company to integrate an employee from Maintenance in every project, particularly in the technical team. This measure was asked to interviewees and they agreed about the benefits this measure could bring.

- **Standardization of formal communications**, that are acknowledged as management tasks, can help improving operational performance. Standardizing formal communications will help on linking the KPI control with the improvement capacity at each level (Villalba-Diez and Ordieres-Mere, 2015).

5.2 Proposed framework for Program Management Capability

Based on previous recommendations, it is possible to develop a framework for Program Management that will serve the organization in reducing the existing tensions and fulfilling its goals, where different aspects and dimensions of the organization are related, with the objectives shown in Figure 2.

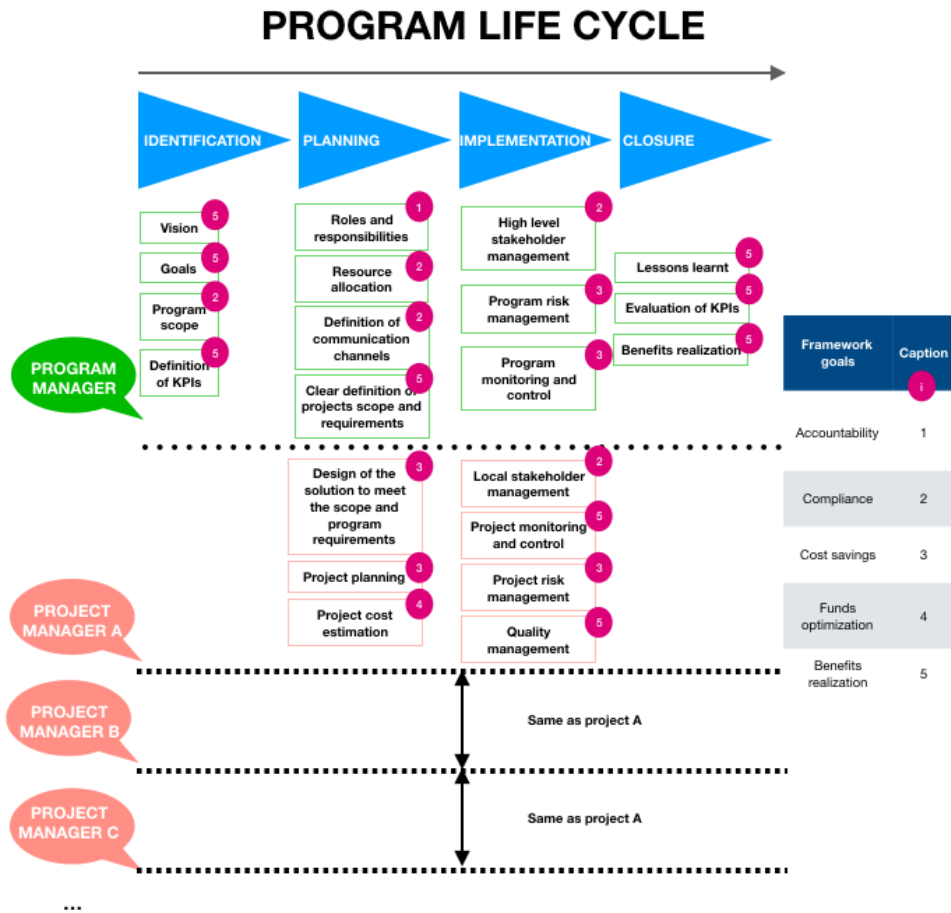
Figure 2. Objectives of the framework for program management



- Accountability, as ownership and decision-making thresholds will be defined and governed, through a Program Management guidance. Roles and responsibilities will be defined geographically.
- Compliance: the nature of the final client makes it essential that ProRail complies with organizational and public sector policies, guidelines and regulations. Local perspective of programs plays a major role in this strategic goal, since some programs - such as BP - highly depend on local stakeholders and public institutions, such as municipalities. Compliance is also achieved by governance guidance.
- Cost savings: specially collaborating with Asset Management / Maintenance Department, cost savings are achieved as interviews revealed how reworks that could have been avoided needed to be done by maintenance staff in stations, that will translate into funds optimization.
- Benefits realization: programs will also have to guarantee that all projects are complying with the client needs, achieved as intended in the business plan. Interdependencies between projects will be easily managed.

Figure 3 shows the framework proposed for programs in ProRail.

Figure 3. Proposed framework for program management



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