Ecosystem infrastructure for smart and personalised inclusion and PROSPERITY for ALL stakeholders

**D404.2-2 Prosperity4All Iterative Business Case Analysis and Evaluation**

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# Glossary

## Table 1: Key terms in this document

<table>
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<th>Key Terms</th>
<th>Description</th>
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<tr>
<td>Prosperity4All Project</td>
<td>Refers to the funded project, which is comprised of the work packages carried out by various sub-project (SP) teams.</td>
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<tr>
<td>Prosperity4All Infrastructure</td>
<td>Refers to the DeveloperSpace Infrastructure that is a collection of all the components, systems and software developed by the core Prosperity4All teams (SP2 teams), as well as applications made by autonomous companies in the periphery (SP3 teams).</td>
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<tr>
<td>Inclusive Ecosystem</td>
<td>When individuals interact with the Prosperity4All Infrastructure, they participate in the creation and growth of an evolving, complex, interconnected system that adapts based on use and feedback – an inclusive ecosystem.</td>
</tr>
<tr>
<td>Functional Packages</td>
<td>Individual services that work together to make up the primary functionality of the Prosperity4All infrastructure.</td>
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<tr>
<td>Design Kit</td>
<td>A set of tools (Use Model, Design Specifications, and Inclusive Design Guides) that sub-project teams can apply to ensure that they are building components that will</td>
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<tr>
<td></td>
<td>a. meet the needs of potential users by solving potential use cases for what they are building,</td>
</tr>
<tr>
<td></td>
<td>b. follow inclusive design specifications,</td>
</tr>
<tr>
<td></td>
<td>c. apply best practices guidelines to maximize inclusion.</td>
</tr>
<tr>
<td>Use Model</td>
<td>A number of representative users who are involved in the creation of the Prosperity4All infrastructure plus a series of use cases that capture their behaviour and interactions in the Prosperity4All infrastructure.</td>
</tr>
<tr>
<td>Design Specification</td>
<td>Descriptions of functionality that should be supported by the P4A infrastructure to facilitate inclusive user interactions. Design specifications do not provide details on how a component should be designed and built, and they are not meant to be instructions for implementation.</td>
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</tbody>
</table>
Key Terms | Description
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**Inclusive Design Guides** | Cards that give succinct descriptions of inclusive design principles, practices, tools, and activities. Sub-project teams can use these guides to develop and design more inclusive solutions from scratch or assess and improve what they have already built.

**User Persona** | Personae are models representing the potential stakeholders who may use P4A products/services. Although they are fictional people, their development and enhancement was based on firstly locally gathered data and then refined based on European data, ending up with international data. They began as early provisional sketches of users and then evolved through iterations as more user information became clear through research and feedback.

The P4A Representative user personae are not meant to be exhaustive of any group of people and only represent the minimum number required to illustrate key goals and behaviour patterns. Personae are meant as behavioural models; they do not represent full demographics of complex and unique people.

**Use Case** | Descriptions of actions that a representative user persona (main actor) might take in a specific context in order to achieve a goal.

**Prosperity4All Economic Model** | A collection of various business models and payment systems, including the contexts within which they are most appropriately used, mapped to the functional packages for the sub-project teams. This model is the subject of the D102.2 report.

**System of Systems** | A collection of autonomous systems or functionality brought together to create a new, more complex system that achieves more functionally (through interconnection and interoperability) than any one of the autonomous parts does.

**Prosperity** | In this project, the meaning of prosperity goes beyond only the financial aspects and it is more defined as providing the required conditions for inclusive participation.

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**Table 2: Abbreviations used in this document**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full form</th>
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<tr>
<td>AT</td>
<td>Assistive Technology</td>
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<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tr>
<td>DoW</td>
<td>Description of Work</td>
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<tr>
<td>GPII</td>
<td>Global Public Inclusive Infrastructure</td>
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<td>P4A</td>
<td>Prosperity4All</td>
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<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
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<td>SP</td>
<td>Sub-Project</td>
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<td>UI</td>
<td>User Interface</td>
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<td>UX</td>
<td>User Experience</td>
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<td>WP</td>
<td>Work Package</td>
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Executive Summary

This document (D404.2-2) is the second iteration of the D404.2 deliverable of work package 404: Assessment and monitoring of P4A Platform, which intends to design usage metrics, monitoring tools, data analytics, evaluation methods to validate the design and business models developed in SP1, evaluate usage and usefulness of the infrastructure on a macroscopic level and to design and implement quantifiable indicators that measure the state of prosperity and serve to help monitor and project economic impact of the P4A infrastructure.

This deliverable is closely related to D404.1 and D404.1-2 and it consists of two parts:

1. First Phase Evaluation Results: In this part, an overview of the results from the first phase of assessment (originally proposed in D404.2) has been provided. This evaluation was carried out with SP2 and SP3 internal project partners responsible for building the core infrastructural pieces and business models of P4A. The results from this evaluation have informed SP4; namely, how the evaluation criteria and the indicators of prosperity should be refined in the second iteration of D404.1 (namely D404.1-2). They will also impact the next iteration of SP1 deliverables (D103.1-2, D102.2-2) to ensure the provided design tools and models reflect these findings/feedback and can meet the needs of the internal partners.

2. Second Phase Assessment Plan: The second part of the document outlines the next phase of an assessment to evaluate how early users and implementers begin using DeveloperSpace as the main P4A infrastructure. In this section, preliminary research questions, methods and recruitment strategies are described. These questions are a work in progress and will be modified based on feedback received from the reviewers of this report as well as the other ongoing evaluations by SP4 project partners. The results from this upcoming round of evaluation will help inform the models developed in the next iterations of SP1 deliverables (D103.2 and D102.3) as well as SP4 deliverables (D404.2-3 and D404.3). This phase of assessment will focus on DeveloperSpace infrastructure early use in order to find out:
   - What do DeveloperSpace users think they need?
   - Do they think DeveloperSpace provides what they need?
   - What do they think of the provided functions in DeveloperSpace? Are they useful to them?
   - Have they found DeveloperSpace useful in building their products?
3. The ultimate deliverable for WP404 (D404.3) will document the results and outline next steps for continuous monitoring and assessment of the infrastructure, the point of convergence of the various iterations of D404.1 and D404.2. The following diagram shows the connection among the SP4 and SP1 deliverables.

Figure 1: SP4 and SP1 deliverables
1 Contribution to the global architecture

- First Phase Evaluation Results:
  The results from the first phase of evaluation with the internal SP2 and SP3 partners have been used to outline the indicators that need to be continuously monitored in order to assess the impact of the P4A platform over time in the second iteration of the D404.1-2 and to be ultimately presented in D404.3. In addition, these results will be used to iterate on and modify the SP1 design and business models, ensuring they meet the various needs of different implementation teams across the P4A project.

- Second Phase Assessment Plan:
  The second phase of the assessment proposed in this report aims to assess whether the functions required by early users of P4A are supported by the mechanisms built in the DeveloperSpace infrastructure. The results from this round of assessment will impact the evaluation criteria and indicators of prosperity and ongoing monitoring strategies for P4A in the final SP4 deliverables including D404.3. Furthermore, these results will be used in the final SP1 deliverables (D103.2 and D102.3) to determine the final specifications for SP1 models and tools.

The contribution of this deliverable is indicated in red at the bottom right of the diagram to show its overarching impact.
1.1 Specific DoW and WP objectives

Which task / WP are source for the results presented in this deliverable?

- T404.2
  - First phase evaluation: A special focus was on evaluating the usefulness and added value (both short and long-term) of the SP1 design tools and specifications for the internal SP2 and SP3 partners while they are building the P4A infrastructure.

- T404.2-2
  - Second phase assessment plan: In this plan the focus will be on determining the indicators of prosperity and sustainability, which enable growth of the P4A infrastructure from the perspective of early users and adopters of the infrastructure.

Which other tasks / WPs have been contacted, to coordinate the results?

- D401.1-2
  - Helped identify an evaluation criteria and framework for the second phase of assessment

How will results contribute to the overall architecture of the project?

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• First phase evaluation results:
  o Used to refine the evaluation criteria and the indicators of prosperity presented in the D404.1-2 report and ultimately in the D404.3 deliverable.
  o Will help modify the SP1 tools and models in D103.1-2 and D102.2-2
  o Will help with selecting questions for the implementers’ evaluation in D402.1-2, (internal report) and for end-users in D403.1.

• Second phase assessment plan:
  o The results from this round of evaluation will be compiled to create requirements for user experience design, supportive network functions, infrastructure design, and sustainability strategies, presented in final SP1 deliverables (D103.2 and D102.3).
  o Furthermore existing economic and design models will be adapted to use the new indicators for further simulations and forecasting, which will be presented in the future iterations of the SP1 deliverables (D103.2 and D102.3).

Which specific task / WP will use the results for their future activities? Which results? How?

• D103.1-2
  o The results from first phase of evaluation will be used to refine the design kit (use model, specifications and inclusive design guides) outlined in D103.1-2

• D102.2-2
  o The results will be used to develop specifications that take into account the required roles, value propositions for all participants, required functionality, necessary supportive functions and interactions and will be reflected in D102.2-2.

• D402.1
  o Will help with selecting questions for the implementers evaluation in D402.1-2

• D403.1
  o Will help with selecting questions for the end-users in D403.1

• T404.3
  o The aggregated and synthesized results from the 404.2 validation plan will be outlined in the 404.3 report
2 Two Phase Evaluation Plan

As described in D404.1-2, the WP404 is carrying out a two-phase evaluation plan in order to assess the P4A infrastructure with different groups of stakeholders:

- First Phase: This phase focused on assessing how the infrastructural mechanisms required for an inclusive ecosystem were being built, and whether SP1 tools and models had had any influence and utility on creation of such mechanisms. This phase of evaluation has been completed and the results are presented in section 3 of this report.
- Second Phase: This phase of evaluation will reflect on the early emergence of the ecosystem and investigate different indicators for making this ecosystem prosperous and sustainable. At this point, the assessment plan will evaluate whether the provided mechanisms offer the functionalities users need and ask for. The assessment plan for this phase has been presented in section 5 of this document.

Ultimately in D404.1-3 and D404.2-3 the team will reflect on the collected results from the two previous assessments to investigate how using P4A infrastructural mechanisms have impacted users. The collective results (D404.1-2, D404.1-3) and a final evaluation plan will be reported in D404.3, which provides guidelines on long-term evaluation methods and strategies to ensure the infrastructure stays lively and active within the ecosystem.
3 First Phase of 404 Evaluation

The main objective of the first evaluation phase was to assess the infrastructural mechanisms that are being developed by SP2 and SP3 teams to ensure they enable growth of an inclusive ecosystem. This assessment also evaluated how SP1 tools and models have facilitated creation of those mechanisms.

To support SP2/SP3 teams in building more inclusive solutions, SP1 provided foundational guidance from conceptual and theoretical models to practical tools. The SP1 conceptual models aim to assist SP2/SP3 teams to better structure their work, avoid common misconceptions and ruts in their domain, locate themselves within the larger P4A picture, and determine the activities that their deliverable should support to enable building of the P4A infrastructure. In addition, the SP1 practical tools provide SP2/SP3 teams with economic and design tools, guidelines and specifications that can help them develop inclusive solutions that are financially sustainable and relevant to the European context. The chart below provides a high level demonstration of SP1 work; detailed information regarding these models and tools are presented in the following sections and could be found in the D102.2 and D103.1 deliverables (Economic Model, Use Model, Design Guides, Specifications).

Figure 3: Overview of SP1 work and its connection to SP4

The evaluation criteria and the assessment plan described in the previous iteration of this report (D404.2) were designed based on the evaluation framework and the indicators of
prosperity developed in D404.1. Thus, this evaluation focused on the infrastructural mechanisms that are currently under development and conducted a micro/infrastructure assessment rather than a macro/ecosystem assessment to ensure these infrastructural pieces under development by SP2/SP3 teams have the capacity to fulfill the vision of P4A platform in the future within the GPII.

3.1 Evaluation Results

The first phase of the 404.2 evaluation was an internal assessment process. As described in D404.2 Section 5 Assessment Plan, an online survey was prepared (Annex, section 5.6) for the SP2/SP3 project partners. The SP2 and SP3 team leaders were contacted in order to assign a member of their team working on a particular sub-task to participate in the survey. In so doing, the survey coverage was maximized and most of the work-packages and their sub-tasks were represented in this assessment.

3.1.1 Survey Coverage

27 internal SP2 and SP3 partners participated in the survey. Some of these members filled in the survey for more than one work-package or sub-task. Thus, a total of 35 completed surveys were collected. Overall almost 84% of the SP2 work and almost 71% of the SP3 work is represented in this assessment.

According to the results most of the organizations that participated in the survey were non-for-profit, (see Figure 4). Interestingly almost half of the respondents were representing large enterprises with more than 250 employees, (see Figure 5).

Although respondents had used different terminology to describe their role in the P4A project, the common roles could be grouped into the following: Engineer/Developer, Director/Manager, and Researcher/Scientist, (see Figure 6).
3.1.2 Analysis Criteria

Survey questions were grouped in the following three sections in order to investigate different aspects of the infrastructural mechanisms being developed by SP2 and SP3 teams:

- Value proposition
- User interface
- Customer support, connection and feedback

3.1.2.1 Results Related to Value Proposition

In this section of the survey, we focused on finding out how SP2/SP3 teams have identified their users and involved them in their design and development processes. We further sought to identify the problems they were trying to solve for those users, and the advantages their product/solution offered over any other alternatives.
In this section, we also examined whether SP2/SP3 teams have been able to apply any of the provided SP1 design tools to ensure users, particularly users with unique needs are included in the design and development of the solutions for P4A infrastructure.

- In terms of how SP2/SP3 teams have identified their end users, four main patterns were recognized.
  
a. Several respondents were working for organizations that had already established a client network. Thus, they identified their end users from their current client list. The majority of respondents in this group had developer/engineer roles in their organizations.
  
b. Several respondents referred to the P4A DoW or any other material provided by the project partners, such as SP1 work, to determine their project’s scope and its users. The majority of respondents in this group were developers/engineers.
  
c. Some other participants defined their user group based on the features their product/solution would offer. For example, if they were building a digital magnifier, they only focused on users who had low vision. There was almost an equal distribution of developers/engineers, researchers/scientists and managers/directors who had used this method to determine their user group.
  
d. Finally a few managers/directors and researchers/scientists used other means such as interviews, surveys, market analysis, and social media to identify who may be the user of their product/solutions.

- In terms of considering users with unique needs in the design and development process, the majority of participants claimed that they had considered users with unique needs. However, the definition, range and severity of unique needs were different for each participant depending on the product/solution they were working on. For example, for some participants low vision was considered a unique need while for others mobility impairment, digital illiteracy, or early Alzheimer was considered to be a unique need.

![Figure 7: Considering users with unique needs](image)
Interestingly, participants who did not consider including users with unique needs were the ones designing and developing products/solutions for other developers. However, this ignores the fact that there are many developers who may have unique needs and require or prefer inclusive tools to be able to contribute to the development processes.

- In terms of involving users in the design and development processes, almost two third of participants had included the users in their processes.

Figure 8: Involving users in the design and development process

- Most user involvement was reported for usability testing and getting users’ insight or feedback regarding software or a solution that was already in production or completed.
- Most participants who had not involved users in their process stated that their product was still in early stages of development and ‘not ready for user testing.’
- A few participants mentioned that they follow user-centered design principles and have involved users throughout their process and not just for testing purposes.

- In response to the question about the problems they were trying to solve for their users, most participants described specific functionalities/features of their product. For instance, a respondent described an application that was trying to help children with Down syndrome or delayed learning development to read. Some of the higher-level problems brought up by the respondents include improving quality of life, lowering cost and efforts to develop accessible software, bringing the users closer to the providers, filling the gaps between the user needs and commercial products and finally creating a revenue stream for users with unique needs.

- Almost 2/3 of respondents were aware of another company/organization that offered similar products/solutions.
The advantages that they stated their product/solution offered over the other available alternatives include:

- Being customizable and configurable for both the end user and the developer
- Ease of integration, which lowers development cost and efforts
- Being open source
- Having simplified interfaces
- Research based solutions that are tested by the end users, which is not found in many commercial products

- In terms of using SP1 design tools and models, such as personae, use cases, and inclusive design guides, more than half of participants had applied the use cases and personae. At the time of this assessment, design guides had just been introduced to the community, thus, most respondents were unaware of them and a few others mentioned that they did not know how to access the inclusive design guides and use them.

Participants who had used the SP1 design tools had found them useful for:

- Defining user requirements, which in turn drove the identification of specific functionalities or features for their product/solution. For example, they helped one of the teams to include geo-location features in their component when users register for a service.
- Inspiration to create more specific use scenarios. For instance, some of the SP1 use cases were used as inspiration when one of the teams was working on defining feedback and feedforward mechanisms.
- Presentation and demonstration purposes in order to communicate complex functionalities through user’s perspective and use scenarios.
- Helping different teams to realize what use scenarios other teams across the project were trying to accommodate in order to better align with them.

The common responses among participants who did not use the SP1 tools were the followings:

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• Already had developed their own personae and use cases
• Development of their solution/product had already been finished or in its final stages once the SP1 tools were introduced
• Their intended user groups were not specifically represented in the SP1 tools, such as a mainstream developer.
• Were not aware of the SP1 tools or did not know how to access them or use them in their projects

3.1.2.2 User Interface

In the D103.1 report, the SP1 team had established global and component specific UX specifications (section 4.2) to guide the SP2/ SP3 teams during the design and development of the P4A infrastructural mechanisms. Issues such as localization and personalization of interfaces based on user needs and preferences were addressed in this section. Basically, the SP1 team was investigating whether the SP2/ SP3 teams had considered including any of the SP1 global and component focused specifications in their user interfaces or not.

• Interface Localization:
  o Majority of respondents had included the language option.
  o Almost one third of respondents did not consider including any localization option in their work for P4A. Among them were project leads that were not considering localization options. This might be due to the extra time and manual effort required to include other localization options, such as local experts or relevant accessibility laws.
  o Here also we noticed that several respondents who were developing components for other developers did not consider including localization options.

Figure 10: Considering localization options for the user interface

• Interface Personalization:
Most participants had included options such as font size and contrast to enable users to adjust and personalize the visual display of their interface. This might be due to the commonality of these options and ease of implementation.

Almost a quarter of respondents did not include any personalization options. Among them there were developers who were building components to be used by other developers as well developers building direct end-user products.

Figure 11: Considering personalization options for the user interface

- Cognitive Load Adjustability:
  - Most participants had considered options for content/layout simplification and clear language.
  - Almost a quarter of the participants did not consider any options to adjust the cognitive load presented on the user interface. Most of these respondents were developers working on the core/infrastructural components of the platform.

Figure 12: Considering personalization options for the user interface

- Input/Output, Browser, Device, and Operating System Compatibility:
Almost all participants had made their work compatible with different input/output devices, such as mouse, keyboard, single switches, eye trackers, etc.

More than half of the participants had made their work operable on both desktop and mobile devices.

Majority of the participants had made their work compatible with different browsers and different operating systems.

3.1.2.3 Customer Support, Connection and Feedback

Similar to the previous section, we used SP1 specifications established in D103.1 report to investigate how SP2 and SP3 team’s work enables and supports customer support, feedback loops and connection among various users.

- Connecting users to other available potential matches when a direct match is not available is one of the main objectives of P4A project. Many respondents stated that this is not applicable to the work they are doing. Among them there were developers building the core/infrastructural components of the P4A project as well as a few project leads and researchers working on developing new business models for P4A project.

Figure 13: Providing an alternative path when a direct match is not available

- In this section, we were also trying to investigate how SP2/SP3 team’s work enables users to make informed decisions.

  a. Participants were asked whether their solution allows users to compare and assess several products/services at the same time. Almost half of the respondents stated that this is not applicable to their work. Most of these participants were developers working on the core infrastructural parts of P4A. However, among them there were a few developers building end user products who also did not
consider providing an option for comparing and assessing different products and services.

b. Participants were also asked whether their solution enables users to try it out prior to making a final decision. Many participants mentioned that they are planning to provide a variety of options, such as demos, trials, and previews for their products/solutions to allow users to try their product/service.

Figure 14: Enabling user to access product

- One of the other main objectives of P4A infrastructure is to support interconnections among different users to facilitate growth of an inclusive ecosystem. Thus, participants were asked whether their work enables P4A users to connect to other users across the P4A project or not. More than half of participants responded no. Some mentioned that they have not been able to achieve this yet. Some others stated that their work is open source, thus, anyone can access it and connect to the community around it. A few others mentioned that they would provide users with contact information of suppliers and vendors if requested. Several participants had assumed the platform itself is responsible for enabling these interconnections and not their individual work.

Figure 15: Enabling users to connect to others across P4A

- In addition to connecting internal users, we were interested in knowing how external users can get involved in P4A infrastructure and contribute to its content. The
majority of participants mentioned that their work is open source, thus, it is already available to the public and external users.

Figure 16: Enabling external users to contribute to P4A

- We were also interested in knowing how closely the providers are connected to their users and communicate product updates and news with them. The majority of participants were planning on informing their users of new updates, news, promotions, etc. via mailing lists, newsletters, public wikis, IRC channels, direct emails, phone calls, Github repository, and DeveloperSpace. Others mentioned that their plan for updating users is not clear yet or it is too early to think about that part of their work. Some were assuming that DeveloperSpace will be responsible for communicating updates with different users.

- In terms of enabling feedback loops, first we wanted to find out how easy and accessible it is for users to connect to providers/suppliers; second, how they can communicate their feedback; and finally how providers/suppliers were planning on using that feedback in their projects.
  a. Majority of respondents were going to use various methods to allow users to quickly and easily contact them, such as direct emails, mailing lists, chats, Skype, videos, Github repository, and easy to access help channels. Several participants had assumed this would be taken care of by DeveloperSpace.
  b. Majority of participants did want to enable their users to provide feedback about their work. They were planning on getting user feedback via email, user testing, user surveys and Github repositories.
  c. Almost all respondents mentioned that they were planning on using the received feedback to improve their work.

- Finally the participants were asked how they were planning to maintain their solution over time. Many respondents mentioned that they were going to apply user comments and feedback to improve their work and fix technical issues. They were also planning on writing test coverage to track the changes made on the Github repository to ensure their work could be easily used and integrated by others.
4 Functionalities for P4A’s DeveloperSpace

The following functionalities were identified in the proposal, survey results, the SP1 biweekly meetings, Face-to-Face meetings (Feb 17-19, 2016), and SP1 webinars (March 21-22, 2016) and should be provided or supported by the design of DeveloperSpace infrastructure:

- P4A’s DeveloperSpace should help developers go beyond their pre-determined user groups to find out who else can benefit from their work across the ecosystem. In so doing, both internal and external developers/implementers of accessible solutions/products would be able to expand their user spectrum and include users with unique needs that are not being reached now.

- The DeveloperSpace could provide informative resources and tools to help internal and external developers and implementers better understand what type of other problems could be solved through making their solution/product more accessible and inclusive.

- Building inclusive and accessible components for users regardless of their role should be one of the main objectives of implementers during the design and development of the infrastructure. To build an inclusive, its constructive units should be built towards enabling accessibility and inclusion as well. Thus, regardless of what role a user has in the ecosystem, the infrastructure should provide a flexible environment where users can evolve and take new roles (e.g. begin as an end-user, learn some programming skills, and get involved in a project as a junior programmer).

- The DeveloperSpace needs to encourage a perspective change among developers and implementers that users are not just testing subjects for products/solutions that are almost finished and completed. Thus, instead of designing a product for them and then having them testing it, users should be part of the design and development of the solutions/products that are being built for them (Nothing about us without us)

  o P4A could provide the required channels to help internal and external developers and implementers involve their end users in the development process right from the start as co-designers and co-developers of a project.

- Many SP2/SP3 developers are building their solution/product on open source Repositories such as GitHub. The DeveloperSpace should consider providing quick access to these external resources and also help developers/implementers/users easily navigate between these different repositories.

  o Many partners establish their project on open source platforms other than P4A. As a result, most user activities, such as feedback, conversations and modifications happen on those platforms. P4A should consider different
strategies to stay connected to these platforms and communicate these activities to other P4A users.

- P4A should provide modules and resources for external developers and implementers to easily include UI localization, personalization, and cognitive load options in their design and development processes right from the start. Both the implementers of the infrastructure and the members of the ecosystem would benefit from such options.

- P4A should provide resources and links that help users gain a better understanding of inclusive design, and design for accessibility, existing and future AT technologies and assistive devices. This not only helps contributors to build more inclusive products/solutions to address their user needs and market gaps, but it also help end users to become more aware of their rights to have access to any of those products and services based on their needs and preferences.

- P4A should provide resources and models to help developers; implementers and providers rethink their common and typical ways of working. These new ways of thinking and doing must be built into their jobs, so it is an expectation and not a nice to have.

- P4A should assist developers in considering the greater context of how their solution/product is going to be used, which other systems are going to be influenced and what other unexpected users could be served.
5 Second Phase of 404 Evaluation (An Assessment Plan)

Based on the evaluation criteria and the flexible indicators described in the D404.1 report, the first phase of a micro level assessment was planned (D404.2) and carried out (results are provided in previous sections) in month 26-32. In that phase of assessment, we tried to investigate how the current implementation of the P4A infrastructure enables growth of an inclusive ecosystem.

The second phase of the assessment aims to reflect on the early emergence of a more inclusive ecosystem and investigate different aspects of the infrastructure for making this ecosystem prosperous and sustainable. The main objective of this phase is to evaluate how user needs are being met through the functions provided by the P4A infrastructural mechanisms. At this point, the assessment plan will focus on evaluating the infrastructure build (micro) while beginning to measure how people are able to use it within the ecosystem (macro). The assessment plan presented in this section includes the method, participants, procedure, and timeline. Once this assessment is completed, the results will be outlined in the D404.2-3 report (month 32-42).

In Phase 1, only the work of SP2/SP3 implementation teams was assessed. However, in phase 2, as the project moves forward and more work is completed, the assessment goes beyond assessing the work of the internal implementers only and it will consider assessing the early adaptors and users of the infrastructure. The following assessment plan provides an overview of the research methods and the preliminary research questions. These questions will be updated and finalized based on the reviewers’ feedback regarding this report as well as the other SP4 evaluations that are currently being carried out (D402.1 and D403.1).

5.1 Methods

5.1.1 Data Collection

An online survey will be created to evaluate how DeveloperSpace infrastructure and its different components provide the functions that early adaptors and users of the infrastructure need. This survey will consist of a variety of open ended and closed questions to evaluate different aspects of the platform pilots and collect the target data from early users and implementers. In order to achieve this, the survey questions will focus on identifying the factors that enable users to:
• Join P4A
• Connect with others across P4A
• Remain active and engaged in the DeveloperSpace
• Build sustainable relationships
• Build financially sustainable solutions/products

The preliminary survey questions are listed in section 5.5. These questions will be further refined based on the feedback received from the SP1 and SP4 project partners.

End users and participants from different SP teams can complete the survey over the Internet and their answers will be stored in a secure and local database. SP1 and SP4 teams will manually analyze the results and report back to the larger P4A team in the next iteration of this report (D404.2-3).

The online survey will be provided in English. However, prior to distribution participants will be asked whether they require a translated version of the survey in their preferred language. In that case, P4A project partners will be recruited to assist with translating the survey to the required language.

5.2 Participants

End users who are familiar with P4A project and have already started using some of its products and services as well internal SP partners who are using different services and products of P4A will be recruited to participate in this online survey.

• We will be working with SP5 team to engage end user organizations and recruit some of their members who are familiar with P4A project and have already started using some of its products and services (either the pilot prototypes or the final implementations).
• We will also be working with SP2 and SP3 teams to identify who their early users are and if there is a way to recruit those users for this phase of assessment (both internal implementers/developers and external users/contributors).

5.3 Procedure

5.3.1 Recruitment

To recruit participants, SP5, SP4, SP2 and SP3 project leaders will be contacted. These leaders are internal project partners and are aware of the evaluation phase required by WP404. The leaders will be asked to help with the recruitment efforts and identify those
individuals and organizations who are using their products and services and are willing to participate in the survey.

5.3.2 Survey Distribution

The identified early users of P4A products and services will be sent an invitation to participate in the survey. This invitation will include a consent form (see annex, section 5.8) that needs to be signed prior to beginning the online survey. The survey link will be open for a month. During this month, the evaluation team will send out three rounds of follow up emails to encourage participants to complete the online surveys. Participation in the survey is voluntary, and participants will not receive monetary compensation.

5.3.3 Data analysis

The resulting raw data will be examined by the SP1 and SP4 evaluation teams to find out how the collected data responds to the identified indicators in D404.1-2.

To analyze the results the balanced scorecard method will be used to more accurately represent the data that is gathered in early micro assessments as outlined in the D404.1-2 report.

The final analysis will further identify novel quantifiable indicators, continuously documenting the overall success of the Prosperity4All architecture within the ecosystem, which will be presented in the D404.1-3 and D404.3. These indicators will allow measuring the state of prosperity and serve to help monitor and project economic impact. In addition, the result of this analysis will be used to draw inferences concerning the implementers’ needs, challenges and expectations regarding the usage of SP1 design and economic models in their work. SP1 models will be iterated and refined based on analyzed results and will be made available to the rest of the project partners in D103.2 and D102.3 reports (delivered in month 42).

5.4 Timeline

The following steps will take place to complete the second phase of the assessment plan proposed in this report:

- Refining the assessment plan based on the received feedback from the D404.2-2 reviewers (end of month 33)
- Refining the survey questions based on the SP1 and SP4 partners feedback (end of month 34)
- Identifying early users and implementers to participate in the survey (month 35-36)
• Distributing the survey among early users and implementers who have accepted to take part in the assessment (month 37-38)
• Following up with participants and collecting survey results (month 38)
• Collecting data and analyzing the results (month 39-40)
• Reporting back the results in D404.2-3 iteration (month 41 and 42)

5.5 Survey Questions

These are preliminary survey questions and will be refined based on feedback received from the reviewers as well as feedback from SP1 and SP4 partners. The current questions provide an exhaustive list of questions to examine the following aspects of early users and implementers’ involvements and interactions with P4A infrastructure (DeveloperSpace) and its components. However, to ensure early users and implementers are able to go through the entire survey and provide useful feedback, some of these questions will be combined or removed from the set to make completion of the survey more achievable. The survey will investigate the following areas:

1. User demographics, social and organizational characteristics and type of involvement with Prosperity4All project?
2. Motivations/reasons to Join Prosperity4All project?
3. Motivations/reasons to use DeveloperSpace solutions/products
4. Motivations/reasons to connect to other users across DeveloperSpace
5. Motivations/reasons to remain active and engaged in the DeveloperSpace

5.5.1 User demographics, social and organizational characteristics and type of involvement with Prosperity4All project

1. Your country of residence
2. Your age group
3. Your field of work or specialty
4. The type of digital devices that you are using on a daily basis
5. Have you ever made any adjustments to your digital equipment/tools to be able to use them or complete a task? Please describe.
6. Are there any areas you need assistance either digital or human?
7. Has there been any instance that you had to abandon a task because you were not able to use a digital equipment/tools? Please describe.
5.5.2 Motivations/Reasons to Join Prosperity4All project

1. How did you hear about Prosperity4All project for the first time?
2. What made you decide to give it a try?
3. Which needs did you think you could address through DeveloperSpace?
4. Which products/services did you use the first time? Why?
5. What did you think of your overall experience?
6. How did your experience with DeveloperSpace match your expectations? In which areas did it exceed your expectations and in which areas did it fall short?

5.5.3 Motivations/Reasons to Use DeveloperSpace Products and Services

1. Which features, capabilities or qualities did you find most helpful when using a product/service in DeveloperSpace?
2. Which features, aspects or qualities did you find most challenging or frustrating when using a product/service in DeveloperSpace?
3. Did you have to make any adjustments to the interface to be able to use the content? If so, which adjustments did you make?
4. Which products/services did you find most useful? Why?
5. How was your overall experience with DeveloperSpace different from your experience with other similar services?
6. What did you find in DeveloperSpace that was not offered in other places?
7. How do you think these products/services could be improved to better meet your needs?

5.5.4 Motivations/Reasons to connect to other users across DeveloperSpace

1. Did you need to connect to any other person for assistance, support, collaboration, etc. when using DeveloperSpace products/services?
2. Which connections/relationships do you think are necessary to build around the products/services you are using?
3. How do you think DeveloperSpace could help you build those connections?
4. How do you think DeveloperSpace could help you maintain those connections over time?
5. Have you tried connecting with others for assistance, support, collaboration, etc. when using other products/services in the past? What were the benefits or challenges?
6. What do you think is the best way to connect to other individuals or communities who have similar interest in the products/services you are using?

### 5.5.5 Motivations/Reasons to Remain Active and Engaged in the DeveloperSpace

1. Which online communities or services are you actively involved with?
2. What qualities do these online communities or services have that keep you engaged and active?
3. Was your involvement with DeveloperSpace a one-time use or are you planning on returning to the system and continuing to use its products/services? Why?
4. Do you think there are areas where you can contribute your knowledge and experience in DeveloperSpace? If so, which areas?
5. Do you think there are areas that you can sell/promote your products/services or expertise in DeveloperSpace? If so, which areas?
6. Do you often provide feedback, rating and reviews regarding the online products/services you use? Why?
7. How do you think DeveloperSpace could help you give feedback more easily and quickly?
Annex:

5.6 First Phase Assessment – Final Survey Questions

1. Type of organization:
   - Commercial
   - Not-for-profit

2. Size of organization:
   - Micro enterprise (Less than 10 employees)
   - Small enterprise (Less than 50 employees)
   - Medium enterprise (Less than 250 employees)
   - Large enterprise (More than 250 employees)

3. Your role in the organization:

4. Your role in the P4A project: (Please check all that apply).
   - Research (new business models, new inclusion models, etc.)
   - GPII infrastructure components (DS, UL, AoD, etc.)
   - Hardware core components
   - Software core components
   - End user PRODUCTS (hardware or software)
   - End user SERVICES
   - Other:

5. Name of the P4A Task or Work Package that you are filling this survey for

Value Proposition:

6. Which of the following SP1 tools have you been able to integrate in your work for the P4A project? (Please check all that apply)
   - Personae
   - Use-Cases
   - Inclusive Design Cards
     - If yes, please briefly describe how they influenced your work.
     - If no, please briefly describe why you were not able to use them.

7. How did you identify who your users are? please describe any methods, strategies, or processes used to identify end users

8. Have you considered users with unique needs among those who may use your product/service? e.g. users with specific cognitive needs
   - Yes
   - No
     - Please briefly explain why

9. Have you involved end users in your design and development process?
   - Yes
   - No
     - Please briefly explain why

10. Which problems are you trying to solve for your users with your product/service?
11. Do you know if there are any companies/organizations that offer similar products or services to your current solution?
   ○ Yes
   ○ No
   ○ If yes, what advantage/benefit does your solution offer over the other alternatives?

**User Interface:**

12. Which of the following localization options have you included in your work? (Please check all that apply)
   ○ Language
   ○ Local financial resources
   ○ Local experts
   ○ Local associations and user organizations
   ○ Relevant accessibility laws
   ○ None
   ○ Other:

13. Which of the following mechanisms have you integrated in your work to enable users to personalize what they can see and hear on the user interface? (Please check all that apply)
   ○ Self-voicing
   ○ Font size
   ○ Contrast
   ○ Caption
   ○ Volume
   ○ None
   ○ Other:

14. Which of the following options have you provided for the users to adjust the cognitive load on the user interface? (Please check all that apply)
   ○ Content/layout simplification
   ○ Content/layout prioritization
   ○ Content/layout linearization
   ○ Clutter reduction
   ○ Filters
   ○ Clear language
   ○ None
   ○ Other:

15. Which of the following input methods is your work compatible with? (Please check all that apply)
   ○ Mouse
   ○ Keyboard
   ○ Single switches
   ○ Eye trackers
   ○ None
   ○ Other:

16. Which of the following have you made your work fully functional and accessible for? (Please check all that apply)
   ○ Different browsers

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Different operating systems
Different devices (e.g. desktop, mobile)

Customer Support, Connection and Feedback

17. What alternative path do you provide for users when a direct match is not available for their inquiry?
   - Recommending products or services that partially match user’s request
   - Referring users to similar products/services by other suppliers
   - None
   - Not applicable
   - Other:

18. Do you allow users to compare and assess several products/services?
   - Yes
   - No
   - Not applicable
     - Please briefly explain why

19. How do you enable users to make an informed choice prior to committing to a subscription, purchase, download, etc. (Please check all that apply)
   - Preview product
   - Test demo
   - Use free trial
   - Access customer support (e.g. live chats, messaging, etc.)
   - None
   - Not applicable
   - Other:

20. Does your work enable users to connect to other stakeholders across P4A, such as developers, vendors, researchers, healthcare providers, etc.?
   - Yes
   - No
     - Please briefly explain why

21. Do you provide options for external users to collaborate with you and contribute to your work?
   - Yes
   - No
     - Please briefly explain why

22. Are you planning on informing users of updates, news, promotions, etc.?
   - Yes
   - No
     - If yes, how?

23. Do you enable users to quickly contact you regarding any questions or concerns about your product/service?
   - Yes
   - No
     - If yes, how?

24. Do you enable users to give you feedback about your products/services?
   - Yes
   - No

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25. Are you planning on using the received feedback to improve your work?
   - Yes
   - No
   - Please briefly explain why

26. What mechanisms do you have in place to maintain your product/service and keep it up to date?

5.7 Second Phase Survey—Invitation Email

Dear [Participant];

We invite you to participate in the Prosperity4All online survey conducted by the Inclusive Design Research Center (IDRC) on behalf of the Prosperity4All project. This survey is an effort to assess how the current P4A infrastructure responds to your different needs and supports your activities and interactions with other users or various products/services across P4A.

Through this survey, we would like to better understand the motivations and reasoning behind your involvement with P4A. Your responses will help us identify the gaps and opportunities for improvements.

The online survey is a mix of [n] multiple-choice, rating and open-ended questions and will take about 45-60 minutes to complete. You can leave the survey at any time and your responses will be saved in our confidential database.

If you would like to participate in this evaluation, please select the survey link and then read through the consent form and tick the consent statement at the end prior to beginning the survey.

If you have any questions or concerns regarding the survey or our process, please contact [person's name] at [email id].

Thank you in advance for your participation.

Sincerely,

5.8 Second Phase Survey—Consent Form

This survey will be conducted by the Inclusive Design Research Center (IDRC) on behalf of the Prosperity4All project, which is funded by the European Commission. This survey is a part of WP 404, the evaluation work package, and aims to assess motivations and reasoning behind users’ involvement with P4A.

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This assessment includes an evaluation of motivations/reasons for joining/leaving P4A, using its products/services, connecting with other user in its ecosystem, and remaining active and engaged.

The survey is a mix of [n] multiple-choice, rating and open-ended questions and will take about 45-60 minutes to be completed. You can pause the survey at any time and continue later; your responses will be saved in our confidential database.

Please read through the information and tick the consent statement at the end if you agree to participate in the survey.

Your participation is voluntary. You are free to answer only those questions that you wish to. IDRC will keep your responses confidential. You will not be identified individually in any way in written reports of this research unless you consent to your quotes being attributed to you using the boxes below. If you wish to withdraw from the study at any time during the project, please email us before [Date]. We will then delete your data.

This research has the approval of the Research Ethics Board of OCAD University, Toronto, Canada (No. 2015-xx). If you have any questions or concerns regarding the survey or our process, please contact person name at email id. If you have any questions about your rights as a participant in this study or any concerns or complaints, you may contact the OCAD University Ethics Review Board at cpineda@ocadu.ca.

If you wish to participate, please check the consent box below and begin the survey:

- I have read and understood the above information. I certify that I am 18 years or older. I consent to participate in this study.
- I consent that direct quotes attributed to me can be used in the research results.
- I would like to receive a copy of the research results.