Introduction to Innovation Partnerships, Procurement by Co-Design

Innovation Partnerships, Procurement by Co-Design (IPPCD) is an innovation procurement method that the MaRS Solutions Lab created and tested with Ontario broader public sector healthcare delivery organizations from 2016-2018 as part of the MaRS Procurement by Co-Design program. For invitational competitive procurements, this method has been used to produce innovations for a variety of healthcare settings from acute to long term care.

The name of this method signifies the collaborative nature of the process as purchasers and suppliers enter into an "innovation partnership" to research and develop a solution together for an identified challenge. The process also focuses on engaging all impacted stakeholders, such as including patients, front-line clinicians, and behind the scenes business personnel, to "co-design" throughout the procurement process.

IPPCD is a multi-phased contract procurement. At a high level, the procurement proceeds as follows:

1. The purchaser issues a challenge brief that outlines the healthcare problem they are facing and the outcomes they want to achieve.
2. Potential suppliers respond with vendor briefs that propose approaches to solving the challenge.
3. The purchaser and potential suppliers meet to discuss their approaches to solving the challenge. The purchaser selects one or more suppliers to enter into an innovation partnership, setting out the conditions that need to be met for the purchaser to buy the solution in the end.
4. The purchaser and supplier partners research, develop, and test a minimal viable prototype of the solution.
5. Should the evaluation of the minimal viable prototype be successful and procurement conditions are met, the purchaser and supplier may enter into a purchasing agreement. The agreement could include things like shared rewards or discounts for the purchasing innovation partner from future sales of the solution.
Benefits of innovation partnership, procurement by co-design

Today’s challenges in healthcare are multifaceted and are rooted in human centric processes that involve many actors. Introducing new services and technologies can solve these challenges. However, the right service or technology, that can drive significant outcomes and can be readily adopted by an organization, is much more difficult to obtain. Using traditional tendering and procurement approaches might make this even more challenging.

IPPCD offers an approach that embraces complexity and manages risk. Through the process, partners ground themselves first in understanding the particular challenges of a purchaser’s environment. They engage with users to uncover insights into why things are not working rather than jumping straight to solution implementation. These insights help to expand and refine ideas for an innovative solution and the user engagement helps with future adoption efforts.

**Learning by doing**

IPPCD encourages learning through small scale experimentation and iteration in the R&D stage, where adjustments to the solution can still be made easily. An outcome based evaluation of the minimal viable prototype, before the final procurement decision, also uncovers insights into the change management required to implement the solution. The process not only results in a fitted solution that is highly valued by end-users and stakeholders, it also offers an enhanced perspective of the opportunities for further innovation in the future. Lastly, the nature of the innovation partnership that forms as part of the procurement can lead to mutually beneficial ongoing relationships that help drive the adoption of the solution across the healthcare system.

**When to use the IPPCD process**

As with any innovation procurement process, IPPCD takes a significant amount of resources and time and should not be used for purchases of everyday goods and services where clear requirements are already known. The IPPCD process was designed for procurements of less than $100,000.

From our observations of participants in the MaRS Procurement by Co-Design program, the minimum amount of time it takes to complete the entire process is approximately 10 months. As partners, purchasers and suppliers need to be prepared to meet at least once weekly for the research, development, and testing phases. Therefore, organizations should weigh the cost and time needed against the benefits of this process to manage the risk of procuring something innovative.

**Other resources to read:**

- **The BPS Primer on Innovation Procurement (Interim)** developed by the Ministry of Government and Consumer Services offers an overview of other innovation procurement models. We recommend reading the primer in conjunction with this toolkit and consulting with your internal stakeholders, including legal and financial teams, to determine which procurement method is appropriate to use for your situation. The Primer can be viewed at: https://www.doingbusiness.mgs.gov.on.ca/mbs/psb/psb.nsf/0/df7388300f40aec68525814d004a00bf/$FILE/BPS_Primer_on_Innovation_Procurement_Interim.pdf
• **Trinity Village Care Centre and VitalHub: Innovation Partnership in Healthcare Case Study** written by Jamie Gamble of Imprint Consulting. This case study examines the innovation partnership between retirement community operator Trinity Village Care Centre and healthcare technology company VitalHub. Through an IPPCD partnership, together they produced a new solution called DocIt that is now being used by multiple long term care providers to improve the accuracy of documentation and workflow of care staff. The case study can be viewed at: https://www.marsdd.com/wp-content/uploads/2018/04/Trinity-Village-VitalHub-CaseStudy-April-2018.pdf

• **Markham Stouffville Hospital and VitalHub: Innovation Procurement at Markham Stouffville Hospital** written by Jamie Gamble of Imprint Consulting. This case study examines the innovation partnership between acute care provider Markham Stouffville Hospital and healthcare technology company VitalHub. Through an IPPCD partnership, together they produced a smartphone application solution called Ignite that is now being used by doctors and residents to make their onboarding process simpler, more efficient and more effective. The case study can be viewed at: https://www.marsdd.com/wp-content/uploads/2019/05/Innovation-Procurement-Markham-Stouffville-revised_noMGCSrefs.pdf

• **Innovation Procurement and High Complexity: 3D Prosthetics with Sunnybrook and Nia** written by Jamie Gamble of Imprint Consulting. This case study examines the innovation partnership between Sunnybrook Health Sciences Centre with St. John’s Rehab Hospital and not-for-profit social enterprise Nia Technologies Inc. Through an IPPCD partnership, together they worked on producing 3D-printed prosthetics for lower-limb amputee patients, a solution to increase the efficiency and effectiveness of prosthetics, while offering a more cost effective and less invasive fitting process for patients. The case study can be viewed at: https://www.marsdd.com/wp-content/uploads/2019/03/Innovation-Procurement_Sunnybrook-Nia-Case-Study-02.pdf

• **Optimizing Healthcare Transitions: Innovation Partnership with Kingston Health Sciences Centre, Bayshore and Verto** written by Jamie Gable of Imprint Consulting. This case study examines the innovation partnership between Kingston Health Sciences Centre, Bayshore HealthCare, and healthcare technology company Verto. Through a three-way IPPCD partnership, they produced a software application called RightPath to more effectively support staff, caregivers and families in the transition and ongoing care of Alternative Level of Care patients as they move from the hospital to receiving care in the Transitional Care Unit, to eventually moving home or into long-term care. The case study can be viewed at: https://www.marsdd.com/wp-content/uploads/2019/03/Bayshore-KingstonHSC-Verto-Case-Study-02.pdf
Introduction to the toolkit

The MaRS Solutions Lab team created this toolkit to provide guidance and templates for those contemplating or undergoing an innovation partnership, procurement by co-design to help initiate and manage the procurement. We hope that the content, inspired by human-centred design practices, will help innovation partners engage and test ideas with stakeholders.

We hope that the IPPCD toolkit will

- Provide a practical set of tools that enable healthcare providers to form successful innovation partnerships to purchase a product or service that creates significant value
- Help change the way healthcare providers and vendors work together so that they can better frame solutions to improve the healthcare sector
- Support an alternative tendering approach that helps manage complexity by exploring the challenges of purchasers before developing a specific solution with a vendor through co-design
- Foster the creation of high potential solutions that can scale across the healthcare system

The toolkit is separated into the following sections:

A. Choosing the problem
B. Initiating the procurement
C. Forming the partnership
D. Exploring the problem together
E. Designing the solution
F. Developing and testing the solution
G. Purchasing the solution

The toolkit does not need to be read in sequence and is not meant to be used as a step by step guide.

Sample timeline

Through the MaRS Procurement by Co-Design Program we observed that an innovation procurement project can take between 10 - 12 months to complete. Here is a sample timeline that provides a breakdown of key activities within the IPPCD process.

The Sample Timeline gives a sense of the minimum amount of time and significant milestones to aim for during each stage of an IPPCD project. This will help set expectations around resources and timing required from both the purchaser and supplier teams.
<table>
<thead>
<tr>
<th>Corresponding toolkit section</th>
<th>Key activities</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choosing a problem</td>
<td>Purchaser identifies a challenge for innovation procurement</td>
<td>~4 weeks</td>
</tr>
<tr>
<td></td>
<td>Purchaser conducts early market engagement or market scan</td>
<td>~2 weeks</td>
</tr>
<tr>
<td>Initiating the procurement</td>
<td>Purchaser prepares challenge brief</td>
<td>~2 weeks</td>
</tr>
<tr>
<td></td>
<td>The challenge brief is posted on a bidding platform, suppliers submit supplier briefs to purchasers</td>
<td>~2 weeks</td>
</tr>
<tr>
<td>Forming the partnership</td>
<td>Purchasers and suppliers meet and form innovation partnership(s)</td>
<td>~2 weeks</td>
</tr>
<tr>
<td>Designing the solution</td>
<td>Purchasers and suppliers co-design solution</td>
<td>~12 weeks</td>
</tr>
<tr>
<td>Developing and testing the solution</td>
<td>Purchasers and suppliers develop and evaluate the minimal viable prototype of the solution</td>
<td>~14 weeks</td>
</tr>
<tr>
<td>Purchasing the solution</td>
<td>Purchasers and suppliers enter into purchasing contracts</td>
<td>~4 weeks</td>
</tr>
</tbody>
</table>

**Multiple Innovation Partnerships**

A purchaser may decide to enter into an innovation partnership with multiple suppliers for one IPPCD project. This could enable partners to design and test multiple solutions independent of each other, or multiple suppliers could work together to create an integrated solution across various healthcare settings. The purchaser may also decide to work with partners in a stage gated manner. For example, a purchaser may work with multiple suppliers in the design stage, but then may select only one supplier to move forward with the testing and final purchase of the solution. It is the purchaser’s responsibility to inform suppliers of the full process during the initiation of the procurement.

Multiple partnerships will need to be managed carefully and may extend the length of time for an IPPCD project. Information sharing will also need to be managed carefully to protect each party’s respected intellectual property, and to properly manage personal health information, where applicable.

**Minimal Viable Prototype**

It is important to note that this timeline assumes that the end state of the solution (product or service) will be a minimal viable prototype, which is a version of the solution that allows for sufficient testing of the outcomes the purchaser wants to achieve and includes a viable business model. The end state of the minimal viable prototype should be negotiated between innovation partners before development begins. Depending on what is agreed to, the timeline may be longer or shorter.
The living toolkit

This toolkit is based on the collective experiences from MaRS and our partners, accumulated and generated together, and used in the IPPCD program. As participants of the program become more confident with the tools and use them more frequently, and as new practitioners begin using and embedding these partnership co-design practices into their procurement toolboxes, we hope that the toolkit can be continually updated with feedback and reflections on use. Over time, we would like to see an expansion of the content in areas such as how to complete a collaborative innovation procurement (e.g. multiple procuring partners), how to successfully scale innovation procurement solutions, and how to develop a successful solution when there is a highly complex problem.

We would like to hear from you; share your ideas, suggestions, and experiences using these tools. Let us know which areas of the toolkit you would like us to develop further.

Questions, ideas, suggestions?

Please contact the MaRS Solutions Lab team through email at solutionslab@marsdd.com or designchallenge@marsdd.com

WARNINGS and DISCLAIMER

BPS organizations are encouraged to exercise due diligence and make informed decisions using the materials in this toolkit, taking into account their organization’s procurement policies. Notwithstanding the content of this primer, designated BPS organizations must meet any/all legal obligations established by the Broader Public Sector Accountability Act, 2010, and the Broader Public Sector Procurement Directive. Those BPS organizations subject to Canadian and international trade agreements must also meet the procurement-related requirements of those agreements.

Information in this toolkit does not constitute legal advice. Procuring organizations should consult their own legal and professional advisors in the planning and implementation of innovation procurement.

Templates included in this toolkit should also be used with discretion and in consultation with your own organization’s procurement directive.

A. Choosing the problem

For the purchasing organization, determining the problem and the outcomes you want to achieve through an innovation partnership is the first step in kicking off the project. With traditional procurement for everyday goods and services, it is easier for purchasers to define exactly what they are looking for, but this is not so straightforward with innovation procurement.

The Challenge Canvas and Ecosystem Map exercises will help you dive deeper into the problem (or problems) you want to address from a broad perspective as you think about the many different networks and actors involved in healthcare delivery. From these exercises, you may be able to identify multiple opportunities for an IPPCD procurement.
Before deciding on the problem you want to tackle, you should think about the stakeholders that you will need to involve by filling out a Stakeholder Map template. Include those impacted by, and involved in, the delivery of care. You will be able to identify people that you want to start engaging early-on to help build buy-in, approval, or participation for the IPPCD project. You might want to consider getting explicit executive endorsement from senior leadership for resources at this stage including additional project personnel and funds for the procurement so you can communicate your budget to suppliers.

Nesta's Fast Idea Generator and the Artefact Group's Behaviour Change Strategy Cards will help you think about how the current state of healthcare delivery could be transformed through innovative thinking and solutions. They may inspire you to think about working with different types of suppliers.

You may also want to consider conducting an early market engagement like those outlined in the BPS Primer to help you understand the current supplier market in relation to the challenge(s) you want to address. You could also complete a market scan with assistance from an Ontario Regional Innovation Centre if needed. You may find solutions that already exist that can be procured through more traditional procurement pathways.

One of the myths of procurement, as mentioned in the guide published by the Council of Academic Hospitals of Ontario (CAHO): The Art of the Possible: Debunking Common Procurement Myths in Ontario’s Broader Public Sector, is that purchasing organizations have to always choose the lowest cost option. This is not true and purchasers are encouraged to explore other ways to define value for money. We recommend reading CAHO’s guide and watching the webinar for examples of how to articulate value for money.

Tools for choosing the problem:

- **BPS Primer**: https://www.doingbusiness.mgs.gov.on.ca/mbs/psb/psb.nsf/0/df7388300f40aec68525814d004a00bf/$FILE/BPS_Primer_on_Innovation_Procurement_Interim.pdf
- **Challenge Canvas Exercise**: https://www.marsdd.com/wp-content/uploads/2019/03/Challenge-Canvas-Exercise.pptx
- **Nesta’s Fast Idea Generator Exercise**: https://www.nesta.org.uk/toolkit/fast-idea-generator/
- **Ontario Regional Innovation Centres List**: https://www.onebusiness.ca/locations
B. Initiating the procurement

The Challenge Brief Template will help you initiate and express your intentions to partner with innovation suppliers. Like a Request for Proposal in the traditional procurement context, this document contains a lot of required information to comply with the open, competitive, transparent, and fair conditions set out in the BPS Procurement Directive.

Like in any innovation procurement, it is important to not overly specify the solution you are looking for from suppliers, but to focus on the outcomes you wish to achieve. After all, if it was that easy to define the solution, you would not need to take the IPPCD approach! The Healthcare Supply Chain Network’s Outcomes Based Specification Guide gives guidance on how to develop and articulate outcomes based specifications.

When creating the outcomes based specifications, the purchaser may want to consider gathering related baseline data if they haven’t already done so. For example, if one of the outcomes for a home care challenge is about reducing delays or rescheduled appointments, the purchaser should have an understanding of the average time a patient waits for their personal support worker or how often visits are rescheduled in a week. This may mean the purchaser may want to conduct time studies, create surveys, or pull data from existing software where possible.

Purchasers are required to state how they will select suppliers to be innovation partners and must use a clear set of criteria and a scoring matrix to make the decision, such as using the Supplier Scorecard Template. To ease the selection process for purchasers, we recommend directing interested suppliers to use a consistent method to respond to the challenge, such as the Supplier Brief Template. The Healthcare Supply Chain Network’s Total Cost of Ownership Guide can help you calculate the potential Total Cost of Ownership of each proposed solution.

In addition to scoring the merit of each supplier’s proposed solution, we recommend that purchasers hold a Dialogue Day at their location. This is a day in which purchasers and shortlisted suppliers meet to discuss the problem and the proposed conditions of the innovation partnership.

Note: It is equally important for suppliers to use this time to assess the purchasing organization as a potential partner and whether the challenge fits within a strategic objective for their business.

Non Disclosure Agreements might potentially be needed from both the purchaser and supplier. It is encouraged that purchasers work with their legal and procurement teams to ensure organizational procurement and privacy policies are met.

Once you have a completed challenge brief, you will need to post it on publicly accessible bidding platforms like Merx, BiddingGo, Bids & Tenders, etc. so that suppliers can respond to your challenge in an open, fair and transparent format.

Tools for initiating the procurement:
C. Forming the innovation partnership

Once the purchaser has selected a supplier(s), and before any work is done, both parties will need to formalize the partnership by signing a **Collaboration Agreement**. The collaboration agreement should not only specify how the two parties will work together, it also defines how intellectual property will be shared (if at all). The collaboration agreement should also specify how the partners will end the relationship should the design and testing phases produce new information that causes the purchaser to not want to continue the IPPCD project.

We recommend that both the purchaser and supplier project team members come together for a **Site Visit** to familiarize themselves with the stakeholders they will be working with and to get a first look at the challenge that they will be tackling.

The partners should also complete a **Team Charter** to set the ground rules for working together. **Business Model Inc’s Story Canvas** tool, helps new partners quickly become comfortable with working together while creating a shared vision of success.

From this point on in the IPPCD Toolkit, whenever you see the word "**team**" this refers to the purchaser and supplier partners collectively.

We recommend that the team has a method of virtually storing shared information such as: typed notes, photos of whiteboard sessions, and hand-drawn or computer-generated assets. Information should be easily accessible by any member of the team. There are a number of low-cost platforms such as Google Drive, Box, Dropbox, Slack, etc. available for this purpose.

Tools for forming the innovation partnership:

- **Business Model Inc’s Story Canvas**: [https://www.businessmodelsinc.com/about-bmi/tools/cover-story-canvas/](https://www.businessmodelsinc.com/about-bmi/tools/cover-story-canvas/)
D. Exploring the problem

We cannot stress how important it is for your team to investigate the challenge together before jumping to designing a solution. This helps ensure that everyone is working with the same understanding and information about the people, habits, attitudes, behaviours, practices, and policies that contribute to the problem(s) that the purchasing organization is facing.

The Field Study Guide and the Interview Guide from Development, Impact, and You will help the team engage with stakeholders as you observe and talk to the people experiencing the problems firsthand. The exercises will also help validate or dispel assumptions that the team may have and reveal further paths of exploration. More importantly, it cultivates deep empathy in your team for the people at the heart of the challenge, helping you uncover the key things that are undocumented and misunderstood.

The User Personas Template helps you distill all the information that you gather about your targeted end-users into useful profiles to keep at hand when designing the solution.

In addition to written notes, using visuals and pictures is a great way to document information. At this point you should update the Ecosystem Map (or create one if you haven’t already) to visualize the relationships between different actors and processes and how they contribute to the challenge. Another great tool is the Journey Map Exercise from the Centre for Care Innovation, which will help you articulate the specific actions and behaviours of one stakeholder at a time.

If it hasn’t been done already, the team should capture baseline data related to the outcomes based specifications you developed in Section B - Initiating the procurement, before proceeding to the design of the solution.

Tools for exploring the problem:

- **CCI’s Journey Map Exercise**: [https://www.careinnovations.org/resources/catalyst-method-journey-mapping/](https://www.careinnovations.org/resources/catalyst-method-journey-mapping/)

E. Creating the solution

In the MaRS Procurement by Co-Design program, participants were encouraged to create their solution iteratively through prototyping. We encourage anyone participating in an IPPCD project to do the same. Most suppliers can bring together a team of resources to quickly develop and engineer a
solution, but this approach can lead to an unnecessary waste of expensive resources and time. Iterative prototyping encourages you to build and test with your stakeholders while increasing the level of fidelity of your prototype with each iteration (e.g. moving from paper concepts, to drawings, to live models you can walk through in person). Inviting stakeholders to be part of the creation of the solution helps to get their buy-in. Furthermore, they will be less likely to resist changing from the way they practice if they feel like they were involved and listened to, rather than having a solution forced on them.

**Concept Prototypes** are tangible representations of an idea that are made of cheap or no materials. Prototypes help us show and test our idea with users, while starting a dialogue with them that can produce more insights into their thinking in a more productive way than just having a conversation. The idea is to not invest a lot of money or time in making prototypes (e.g., using hand drawings, post-its, role playing) so that you modify them rapidly based on people’s feedback or discard them without any pain. Teams should use concept prototypes to test ideas as early as possible and fail fast, so there is still time and money to make changes to their ideas. The **Storyboard** and **Animatic** prototypes are two commonly used types of prototypes to use at this stage.

When you are creating and testing out your prototypes it is important to think about the question(s) you want answers to and select the appropriate prototyping method. For example, role playing or a **Wizard of Oz** simulation may give you more insights into how users behave in a certain situation, versus a paper mock-up. Also ensure you have a method for collecting all the feedback and data generated during your prototyping sessions with users. This can be accomplished by recording video and audio or perhaps be done by building data collection into your prototype. For example, in a prototyping activity for a technology-based solution, you could get a person to mark their selection on a drawing of an online form.

After several rounds of concept prototyping, your team can increase the fidelity of your prototypes and may choose to conduct some **field prototyping**. You will test out your idea in the setting in which you imagine your product or service will be delivered and with the people you hope to engage. For example, if you are testing out a new waiting room management system, for your field prototype, your team would bring prototypes into an actual waiting room to be tested by the patients, healthcare staff, and accompanying caregivers.

Creating a **Service Blueprint** will help your team document the details of your solution and help to identify all the supporting resources and activities that need to take place – especially those performed “behind the scenes.” **Strategyzer’s Business Model Canvas** will help your team think more broadly about the activities and resources needed to deliver and potentially scale the solution to other organizations.

Tools for creating the solution:

- **Strategyzer’s Business Model Canvas**: [https://strategyzer.com/canvas/business-model-canvas](https://strategyzer.com/canvas/business-model-canvas)
F. Developing and testing the solution

Before diving into developing the minimum viable prototype of the solution, your team should thoroughly review the testing results, and feedback from stakeholders gathered during the prototyping phase. The team should engage in a serious discussion to determine whether they continue with the development of the solution as designed, change and pivot their design plans, or stop the project and celebrate the learnings from the work they have done together so far.

The teams should also review results, alongside the baseline data gathered and the outcomes based specifications that they are targeting, to see if their solution design fits with their original goals.

The Minimum Viable Prototype Development and Evaluation Plan Template is a document that helps the team come to a consensus on the scope of their solution development and evaluation. It also guides teams in planning the schedule around developing the solution and the total cost of ownership.

Tools for testing the solution:


G. Purchasing the solution

We don’t have any tools to help you negotiate the purchasing of the solution. We encourage your team to think about the broader benefits of the partnership and how that can be formalized into any purchasing or service agreements. For example, for a discounted cost of the solution, the purchaser may agree to be a demonstration site for the supplier or receive royalties from future sales of the solution.

Tools for purchasing the solution:

- Refer to the procurement conditions set up in B. Initiating the procurement.