Productivity Improvement Labs

Guidebook



Capability five15

A capability designed to continuously improve productivity and productivity gains are equitably shared by design.

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Release Date: Nov 05, 2026

Version: 1.2

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Capability *five15*

A system designed to natively guarantee the equitable distribution of gains arising from improvements in productivity.

Introduction

From an economic system point of view, it is broadly recognized that as economies expand through productivity improvements, so does the real living standard of all contributors. With that rationale in mind, most liberal democratic economies are designed to allow entrepreneurs, traders and business folks make as much money as possible, disguised as economic growth. The theory being that some of this new wealth will reach the average citizen or employee, through the idea of trickle-down economics, which was famously popularized by Ronald Reagan and Margaret Thatcher during the 1980's.

During the past four decades, the overall economies of most countries have expanded dramatically, however, these gains have not trickled down to lower- and middle-class families as expected. This is especially true in most developed economies. As result of this disconnect, we are seeing hopelessness in our communities, political polarization, dissatisfaction with "The System", as well as general overall frustration and anger.

Without dismantling the entire economic system, what if we create a productivity improvement capability, enabling real economic growth that inherently ensures that the productivity gains can only happen if there is genuine trust between the parties that the gains will be shared equitably. This is the real thesis of this initiative.

To build such a capability, we at Productivity Improvement Labs have been working on "**Capability five15**" with following performance measures at its center:

- Derive **5-fold** improvement how the organizations conceive, plan, fund, execute and assess the impact of investments in change programs, especially technology enabled opportunities.
- Minimum **15%** productivity improvement annually in all Value Chain Processes

The following five chapters define the structure of this capability and how to build required skills that create exuberance in economy rather than despair.

1. Enabling Human Genius to Shine.
2. Origin of Capability five15
3. The Fundamentals of Capability five15

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4. Roles and Skills Required
5. Supporting Technology Solutions

The objective of Capability five15 is to establish a productivity improvement system in which the benefits are inherently shared, rather than relying on trickle-down economics. We welcome your feedback on this initiative.



Chapter 1: Enabling Human Genius to Shine

Business Context for Capability five15

As we progress through the first quarter of the 21st century, advances in artificial intelligence (AI) and machine learning (ML) technologies, political and societal winds of change are disrupting current status quo and creating a lot of consternation among people. To not be dismayed, these disruptions are also ushering in a lot of new opportunities for people in all age categories.

Where do we start?

To begin, it is important to acknowledge that as use of AI/ML increases to eliminate productivity robbing activities another door opens for human innovation and talent to excel. In this context, we are advocating a system, Capability 5:15, that maintains an unwavering commitment to genuine productivity improvement as well as guarantees that the benefits driven through productivity improvements are distributed fairly.

Consider following results and their impact on your organization, and community as a whole:

- Derive **5-fold** improvement how the organizations conceive, plan, fund, execute and assess the impact of investments in change programs, especially technology enabled opportunities.
- Minimum **15%** productivity improvement annually in all Value Chain Processes

These outcomes are achievable by applying methodologies such as Kaizen, Quality Circles, Self-Directed Work Teams, and various other approaches focused on productivity and quality improvement that have proven effective historically. Capability 5:15 adopts these foundational principles and expands upon them, leveraging the **Lived Experiences** of employees, customers, and communities to develop comprehensive insights into opportunities and facilitates their successful implementation.

In next four chapters, we describe the origine of capability five15, its structure, innovative ways to develop productivity improvement professionals and secure, sustainable ML/AI enabled technology solutions.



Chapter 2: Origin of Capability five15

My Lived Experiences as a Manufacturing Engineer and a Systems Architect

Abstract

In the late 1980s, at the outset of my career as a manufacturing engineer, methodologies such as quality circles, kaizen, Taylor's scientific management, and advancements in industrial automation played a significant role in improving the productivity our plants. The worker engagement was an integral aspect of these improvement programs, with each employee regarded and valued as a knowledge worker. As western economies shifted from manufacturing to service industries, many of these practices diminished in their prominence.

This chapter examines productivity improvement methodologies originating in manufacturing and adapts them to service industries. Throughout this work, a fundamental principle is being respected, the system must inherently support fair distribution of gains achieved through the productivity improvements, leave behind "Winner Takes it All" mindset.

Historical Perspective – Manufacturing

At the outset of my career as a manufacturing engineer in 1989, our manufacturing engineering team was entrusted with both the responsibility and accountability for enhancing productivity across all production lines, areas, the plant, as well as throughout the entire supply chain. Rather than passively awaiting requirements, we actively evaluated operational workflows, established strong relationships with staff, and gained a comprehensive understanding of organizational strategies pertaining to quality, fill rate, employee safety, and relevant technology standards etc. By systematically assessing all factors, we formulated complete solutions that included clear identification of opportunities, roadmap, benefits, costs, and potential risks. Upon securing funding, it was incumbent upon us to implement the necessary changes, foster a results-driven culture, and create an ecosystem for the desired results to materialize. The team's performance was not judged by the theoretical elegance of diagrams; instead, our impact was measured by:

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- Number of opportunities that received funding, past history played a role in funding decisions
- Opportunities that achieved their goals within the anticipated investments and disruptions
- Attainment of safety, quality, cost, and related performance targets
- Scalability of solutions to other plants and associated processes
- Recognition of both outcomes and the methodologies employed to achieve those outcomes

Throughout the team, a fundamental principle was at play: our efforts combined with our excuses did not equate to results. Results mattered and productivity improvement was the primary goal of the change programs as well as how results were achieved mattered even more.

Services Industries – both Private and Public

Over the past 25 years, as the manufacturing sector declined, I have transitioned to working in the services industry as a Systems Architect. In many organizations where I worked, it is my observation that the Chief Information Officer (CIO) is responsible for integrating new technological capabilities with limited focus on productivity. With the emergence of solutions driven by artificial intelligence and machine learning, moving forward, the CIO's role has become even more critical. It is therefore essential for CIOs in services organizations to have a critical review of how new technologies drive productivity improvements, which is the fundamental reason for introduction of technologies. Drawing from my experiences in manufacturing engineering and systems architect, I am proposing Capability five15.

The Idea of Capability five15

- Performance Measures
    - Capability Health: 5-fold improvement in how organizations conceive, plan, fund, establish scope of change and assess the impact of change on productivity improvement in underlying processes.
    - Business Outcomes: 15% minimum productivity improvement in all value chain processes annually.

- The Benefits
    - Once for all, overcome the constant friction introduced by the idea of Business Requirements among business, IT and project team fiefdoms.
    - Ability to engage staff, learn from their lived experiences and create proactive pipeline of productivity improvement opportunities
    - By integrating bottom opportunities and top-down strategies, create pragmatic investment plans and scope of each change.
    - Ability to clearly assess the impact of every dollar invested in change and improved productivity
    - Create next generation business leaders who understand how to improve productivity.

Chapter 3: Fundamental of Capability five15

Performance Measures – Business Outcomes, Capability Health Check, Processes Encapsulated in the Capability, Roles and Skills Required to Execute, Technology to Manage the Enabling Workload.

Abstract

Capability is a key concept in evaluating and enhancing systems performance. It is typically decomposed into several sub systems - performance measures with leading and lagging indicators, enabling processes, skills, and supporting technology. This paper outlines the basics of capability five15.

Performance Measures

- Business Outcomes
  - **5**-fold improvement in how organizations conceive, plan, allocate resources, execute and assess impact of change
  - **15**% productivity improvement annually in Value Chain Processes' performance

- Capability Health Metrics
  - Performance Measures
    - Lived Experiences of staff and customers, other relevant stakeholders
    - Pipeline of Opportunities
    - Impact of Investments/Change
  - Diagnostic Measures
    - State of Opportunities by Line of Business, and by Value Chain Process
    - Stakeholder engagement
    - Status of Pipeline of Opportunities

Capability five15 Governance

Typically, responsibility for the above outcomes is spread over number of different roles. To ensure timely support and accountability, we are advocating the following governance:

- Capability Owner – This role owns the capability, need to demonstrate results to his/her superiors.
  - CEO and CEO direct reports

- Capability Manager – This role manages the day-to-day operations of the capability, clearly has the accountability for capability's performance and reports directly to the capability owner. The Role:

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- Director Enterprise Productivity
- Is supported by - Enterprise PMO, Enterprise Architecture, Organization Change Management,
- Partners with – Value Chain process owners

Capability five15 Encapsulated Processes

- Proactive – proactively define and maintain a pipeline of opportunities
  - Tasks
    - Capture the Lived Experiences of staff/customers with current processes, policies, procedures and systems, etc.
    - Identify potential improvements based on Experiences and industry expertise
    - Group improvements and strategies into Potential Opportunities
  - Deliverables
    - Backlog of improvements for each process and service backed by specific stakeholder's Lived Experiences and enterprise strategies
    - Pipeline of Opportunities, Architected Roadmap and Business Case

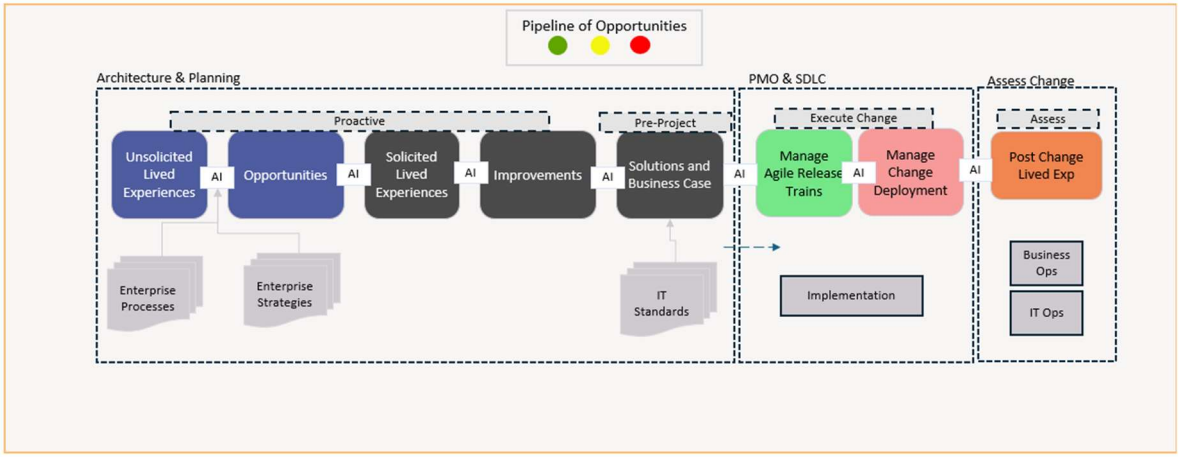
- **Pre-Project** – Given level of available investment, need for improvement and willingness to accept disruption create scope for change
  - Tasks
    - Detail the selected Opportunities and develop comprehensive Roadmap and business case
    - Create detailed implementation plan
  - Deliverables
    - Detailed Architecture, Business case implementation plan for the selected scope

- **Execute Change** – Implement roadmap that is based on approved scope
  - Tasks
    - Change scoped processes, systems and OCM
    - Agile project delivery
  - Inputs
    - Clearly defined backlog of improvements (Tech dependent, non tech dependent, transformational)
    - Adapted Roadmap for target improvements
    - Adapted Business Case
    - Milestone level project plan
  - Outcomes
    - Manage all resources () and deploy change to production
    - CAB – did implementation conform to approved architecture roadmap

- **Assess Impact** – Post change – assess if the desired change is created both in systems and eco system
    - Tasks
        - Assess if improved processes overcame the obstacles identified through the lived experiences
        - Assess eco systems and readiness for results to materialize
    - Outcome
        - Reassess Lived Exp of impacted stakeholders and determine if obstacles are removed,
        - Assess if the change created the conditions for intended outcomes to materialize

Technology

Stakeholder Forum is a machine learning enabled software as a service implemented on ServiceNow platform or on Microsoft Azure cloud. The automation offers number of benefits



Key Roles and Skills

- Product/Service Custodian – this role ensures the service readiness. This is a non managerial role and provides an objective view of service's readiness to meet the needs of the enterprise. Typically this role reports into lines of business leadership.

- Systems Architect – this role brings deep architecture, system engineering and business skills that ensure technology capabilities are optimally aligned to business needs as well as solid understanding of ROI.

- Project Manager – this role brings deep project management skills to manage diverse set of skills and motivations to deploy architected solutions with deep focus on creating an environment for results to materialize.

Abstract

The chapter 4 describes the skills required to realize the benefits of capability 5:15 as well as how Productivity Improvement Labs is helping develop next generation professionals.

Capability 5:15 Processes

Performance Measures

- Business Outcomes
    - **5**-fold improvement in how organizations conceive, plan, allocate resources, execute and assess impact of change
    - **15**% improvement annually to Value Chain Processes

- Capability Health Metrics
    - Performance Measures
        - Lived Experiences of staff and customers, other relevant stakeholders
        - Pipeline of Opportunities
        - Impact of Investment
    - Diagnostic Measures
        - State of Opportunities by Line of Business, and by Value Chain Process
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Processes

- Pipeline of all Opportunities
- Roadmaps for Strategic Opportunities
- Implementation Roadmap, Business Case and Detail Plan
- Drive Change
- Assess Impact

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Key Roles

Roles and skills required to manage capability five15 and generate expected productivity improvements.

- Product/Service Custodian – this role ensures the service readiness. This is a non managerial role and provides an objective view of service's readiness to meet the needs of the enterprise. Typically, this role reports into lines of business leadership.

- Systems Architect – this role brings deep architecture, system engineering, relevant technologies and business skills that ensure technology capabilities are optimally aligned to meet business needs as well as solid understanding of ROI.

- Project Manager – this role brings deep project management skills to manage diverse set of skills and motivations to deploy architected solutions with deep focus on creating an environment for results to materialize.

Skills Matrix

- Competency
    - Basic – Basic understanding
    - Applied – Self sufficient
    - Deep – Enhance state of the art

Skills Definition – ability to	**Product/Service Custodian**	**Systems Architect**	**Project Manager**
Build relationships that are based on trust and integrity with all stakeholders	Deep	Deep	Applied
Gain deep appreciation for organization culture, organization structure, operating models and strategic intent	Deep	Deep	Applied
Manage both up and down with integrity and scientific methods	Deep	Deep	Applied
Resolve conflicts among differing viewpoints	Applied	Deep	Applied
Engage all stakeholders to share their lived experiences with current systems, processes, policies as they perform their day-to-day tasks.	Deep	Applied	Basic
Create a culture that respect timeline and scarce resources	Applied	Deep	Deep
Translate lived experiences of all stakeholders into potential improvements	Deep	Deep	Basic
Create pragmatic systems architectures that is based on scientific methods.	Basic	Deep	Basic

Skills Definition – ability to	Product/Service Custodian	Systems Architect	Project Manager
Define stakeholder appropriate architectural artifacts	Basic	Deep	Basic
Package decision documents in a way that decision information can be confirmed at each investment stage	Basic	Deep	Basic
Ability to manage all resources, timelines and costs without sacrificing the culture	Applied	Applied	Deep

Approach to Develop Necessary Skills

To master the skills necessary for above roles, we believe, both a formal education and professionally managed hands on programs are necessary.

- **Candidates**
  - Third-year elective course for Business, Engineering, Computer Science and Social
  - Professionals with 1 to 3 year working experiences and employment at one of our partner organizations

- **Education : Level 1**
  - Systems Architecture Thinking – ability to think in terms of contextual, conceptual, logical and physical architecture perspectives
  - System Architecture Domain – People, Process, Information, Data, Application, Infrastructure and Security
  - End to end process to develop, communicate, implement and assess impact of systems architecture

- **Training**
  - Hands on mentoring to apply the formal education techniques to practical situations.

- **Internship Post 3rd year : Level 2**
  - The four-month internship or 12-month residence in one of the above roles within Productivity Improvement Labs or at one of our partner organizations

- **Post Graduate Residency: Level 3**
  - Upon graduation candidates have two option to join Productivity Improvement Labs Postgraduate 3 year residency program or join the residency program at one of our partner organizations.
  - Graduate school or employment with any other employer

Future Management Professionals

As organizations expand, there is a consistent demand for senior managers with expertise in operations management and ongoing productivity enhancement across value chain processes. The Capability 5:15 framework provides an ideal environment for cultivating the next generation of business leaders.



Chapter 5: Supporting Technology Solution

Extending ML and AI capabilities, not only to streamline processes and data management but also to proactively engage all stakeholders and help them become knowledge workers.

Abstract

Chapter 5 outlines technology solutions that facilitate capability 5:15. The Stakeholder Forum is designed to leverage the power of machine learning and artificial intelligence to streamline Capability 5:15 encapsulated processes and securely scale across the enterprise. There are two deployment options for the Stakeholder Forum: extend the current ServiceNow footprint or deploy WhiteSparrow Platform within your organization's own cloud environment and extend it royalty free.

Capability five15 Processes

Performance Measures

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- State of Opportunities by Line of Business, and by Value Chain Process
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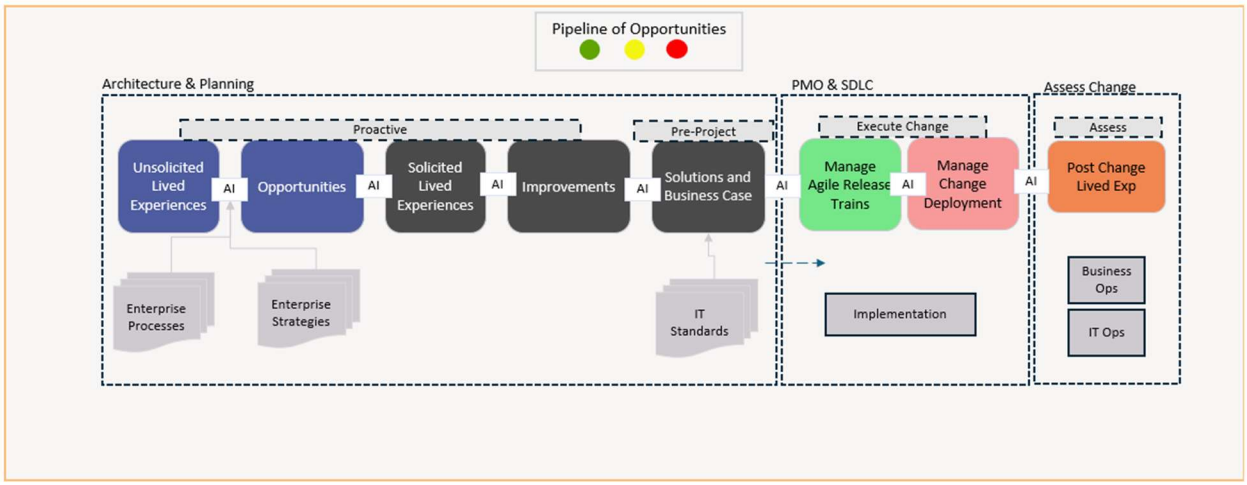
Processes

- Pipeline of all Opportunities
- Roadmaps and Business Case for Strategic Opportunities
- Implementation Roadmap
- Drive Change
- Assess Impact

Stakeholder Forum - Software as a Service Solution

A machine learning enabled system that streamlines above processes.

End to End Process



Overall, the platform is composed into four modules, the Lived Experiences enabled improvement opportunities is a common thread through out the system.

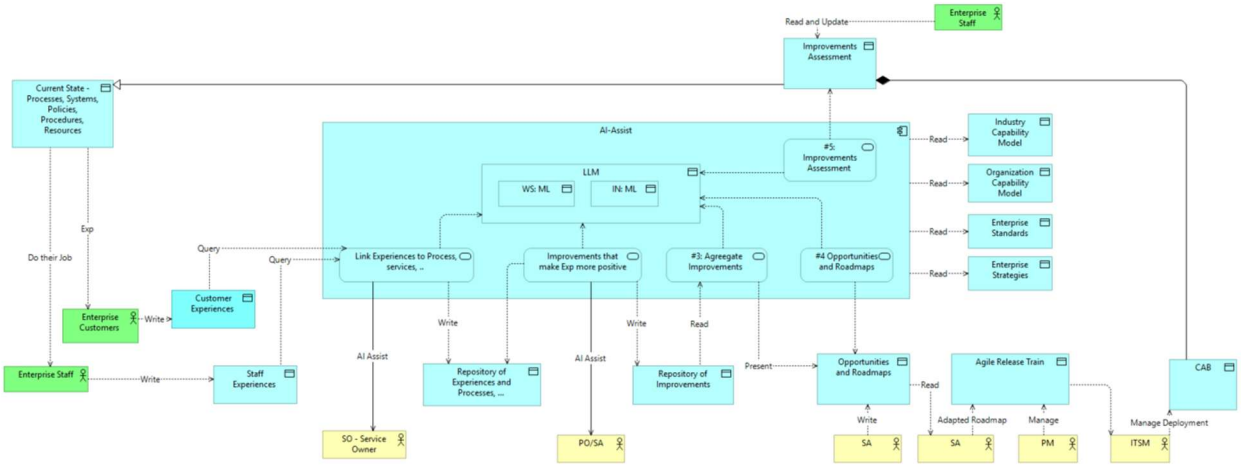
- Architecture and Planning
  - Proactively engage all stakeholders and learn from their lived experiences with current processes, systems, policies and procedures
  - With the help of ML and AI, translate experiences into improvements
  - Improvements along with strategic direction of the organization, define opportunities, establish roadmap and implementation plans

- PMO and System Development Life Cycle

- With established and funded scope and roadmap, enable PMO teams to drive the necessary change

- Assess Impact
  - Ability to assess the impact of change on new/improve processes through lived experiences. The system helps define if the changed process made the experience more positive as expected and necessary ecosystem for results to materialize.
- Performance Dashboard
  - It is real-time dashboard created through naturally existing data as a part of process.

Application Architecture

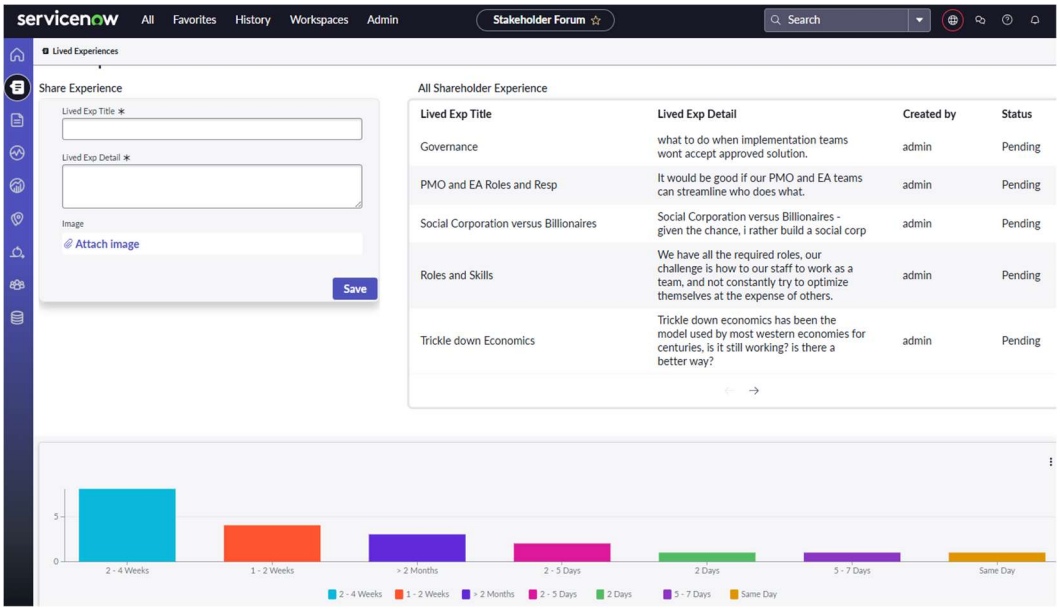


The application architecture consists of two modules

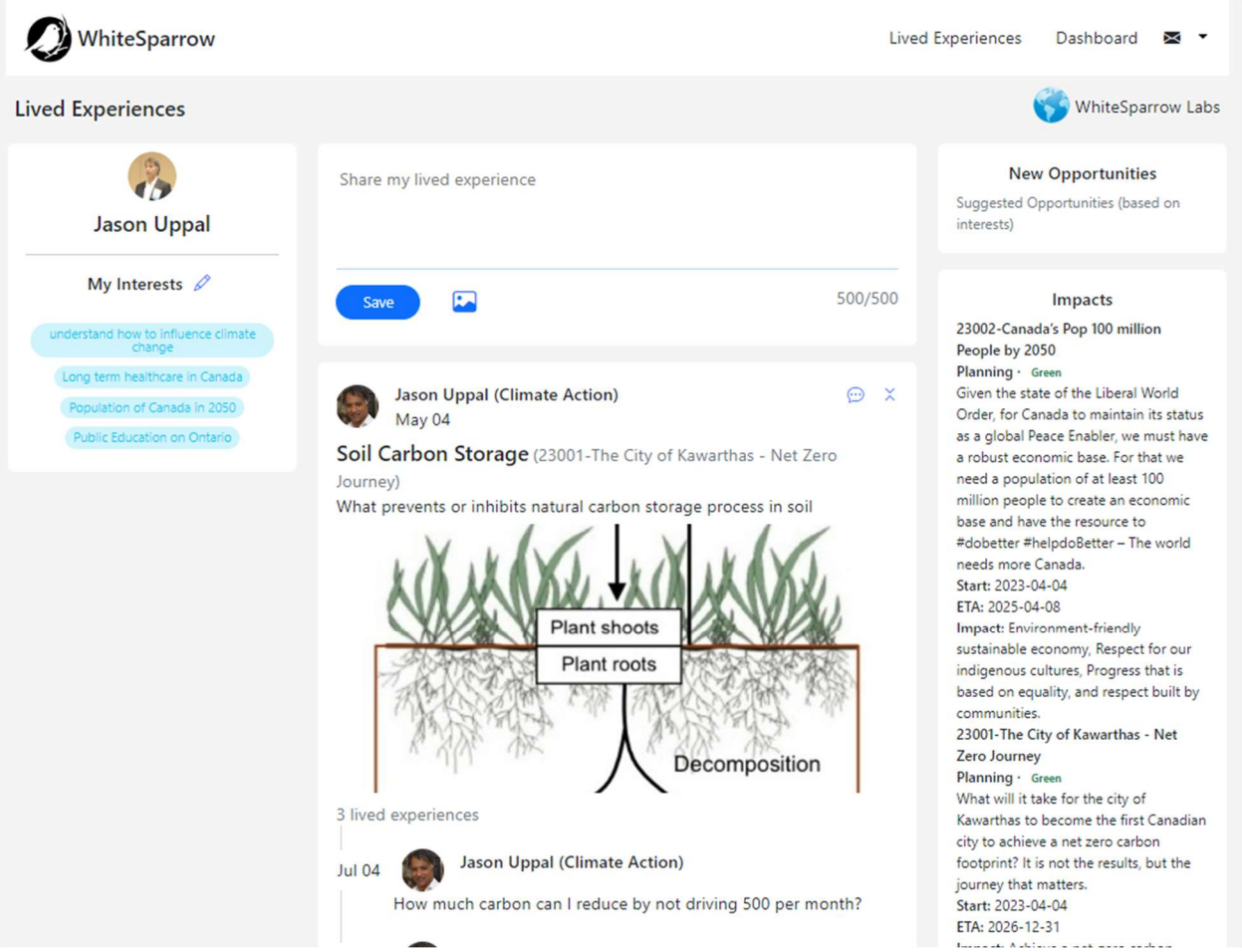
- LLM – large language model that is specific to each industry and generalized industry model is used to help create smart agents to streamline the work of improvement teams
- Stakeholder Forum app manages all data input and output responsibilities as well as all f=workflows
- WhiteSparrow Platform handles all security, auding and data privacy concerns

Deployment Options

Extend your current ServiceNow Platform



Deploy WhiteSparrow Platform on your own Azure Cloud


WhiteSparrow
Lived Experiences
Dashboard
Lived Experiences
WhiteSparrow Labs
Jason Uppal
My Interests
understand how to influence climate change
Long term healthcare in Canada
Population of Canada in 2050
Public Education on Ontario
Share my lived experience
Save
500/500
Jason Uppal (Climate Action)
May 04
Soil Carbon Storage (23001-The City of Kawarthas - Net Zero Journey)
What prevents or inhibits natural carbon storage process in soil
Plant shoots
Plant roots
Decomposition
3 lived experiences
Jul 04
Jason Uppal (Climate Action)
How much carbon can I reduce by not driving 500 per month?
New Opportunities
Suggested Opportunities (based on interests)
Impacts
23002-Canada's Pop 100 million People by 2050
Planning · Green
Given the state of the Liberal World Order, for Canada to maintain its status as a global Peace Enabler, we must have a robust economic base. For that we need a population of at least 100 million people to create an economic base and have the resource to #dobetter #helpdoBetter – The world needs more Canada.
Start: 2023-04-04
ETA: 2025-04-08
Impact: Environment-friendly sustainable economy, Respect for our indigenous cultures, Progress that is based on equality, and respect built by communities.
23001-The City of Kawarthas - Net Zero Journey
Planning · Green
What will it take for the city of Kawarthas to become the first Canadian city to achieve a net zero carbon footprint? It is not the results, but the journey that matters.
Start: 2023-04-04
ETA: 2026-12-31



About Productivity Improvement Labs

Extending ML and AI capabilities, not only to streamline processes and data management but also to proactively engage all stakeholders and help them become knowledge workers.

Productivity Improvement Labs Vision

Invent systems, practices and skills to overcome productivity stagnation challenge in Canada and across commonwealth countries.

Contact

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