PM solution for commercialized Solar projects

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Guest Lecture for Course Project CS/SSW 555
Stevens Institute of Technology

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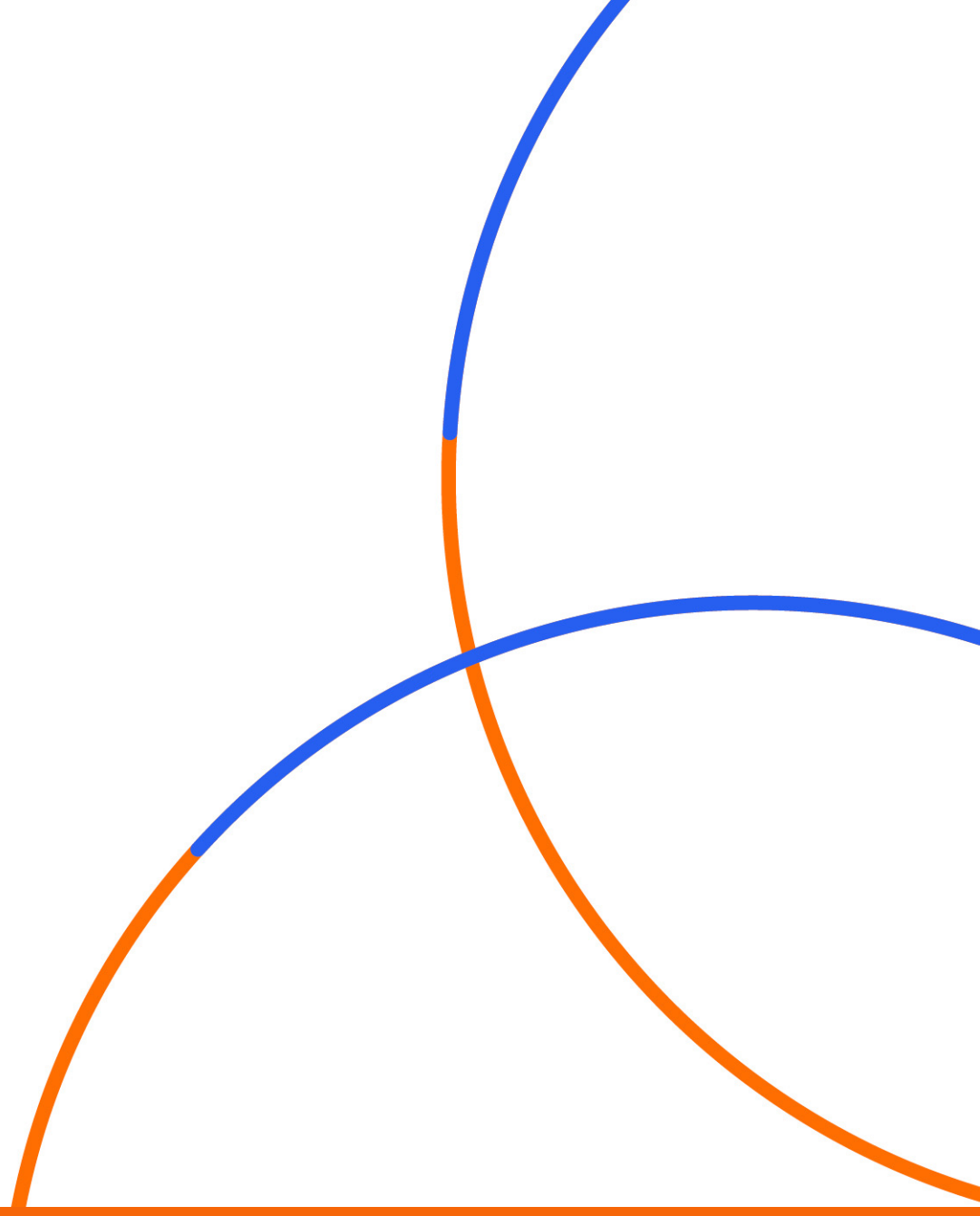
Project Manager @ Altice USA

Experienced in Project management and Operations Management

- Altice USA, 2022 March - present
  - Project Lead for the Customer Portal Redesign project
  - Managing the execution of the portfolio of digital projects within eCommerce Sales & Operations team
- Launch - a live music production company 2019 - 2022
  - Co-founder & Chief Operations Officer
  - Produced > 50 in-person live music concerts, > 4,000 hours live-streaming concerts, reached over 550K audience accumulatively
- Stevens Alumni 2009 – 2014
  - MS of Engineering Management

The practical use of Agile-based Project Management



altice

Who We Connect

Altice USA is one of the largest broadband communications and video services providers in the United States, serving nearly 5 million customers across 21 states with Internet, TV, Phone and Mobile services, while building a new 100% Fiber Internet network delivering speeds up to 5 Gig to more homes every day. We also provide advertising solutions and news content from a4, News 12, Cheddar News, and i24NEWS brands, Altice USA keeps customers connected to what they need.

Our Core Products

optimum. optimum.fiber optimum.mobile

Our News/Media Brands

news12 cheddar news a4 ADVERTISING i24 NEWS

Customer Portal Redesign Project

Overview & Objectives

Overview

- Deliver a new best-in-class and streamlined portal for new and existing customers along with an improved support experience which will ultimately replace current customer portal
- The new portal and support center will redefine the customer journey for account creation, account management, billing and payments, offers and upgrades, and service management

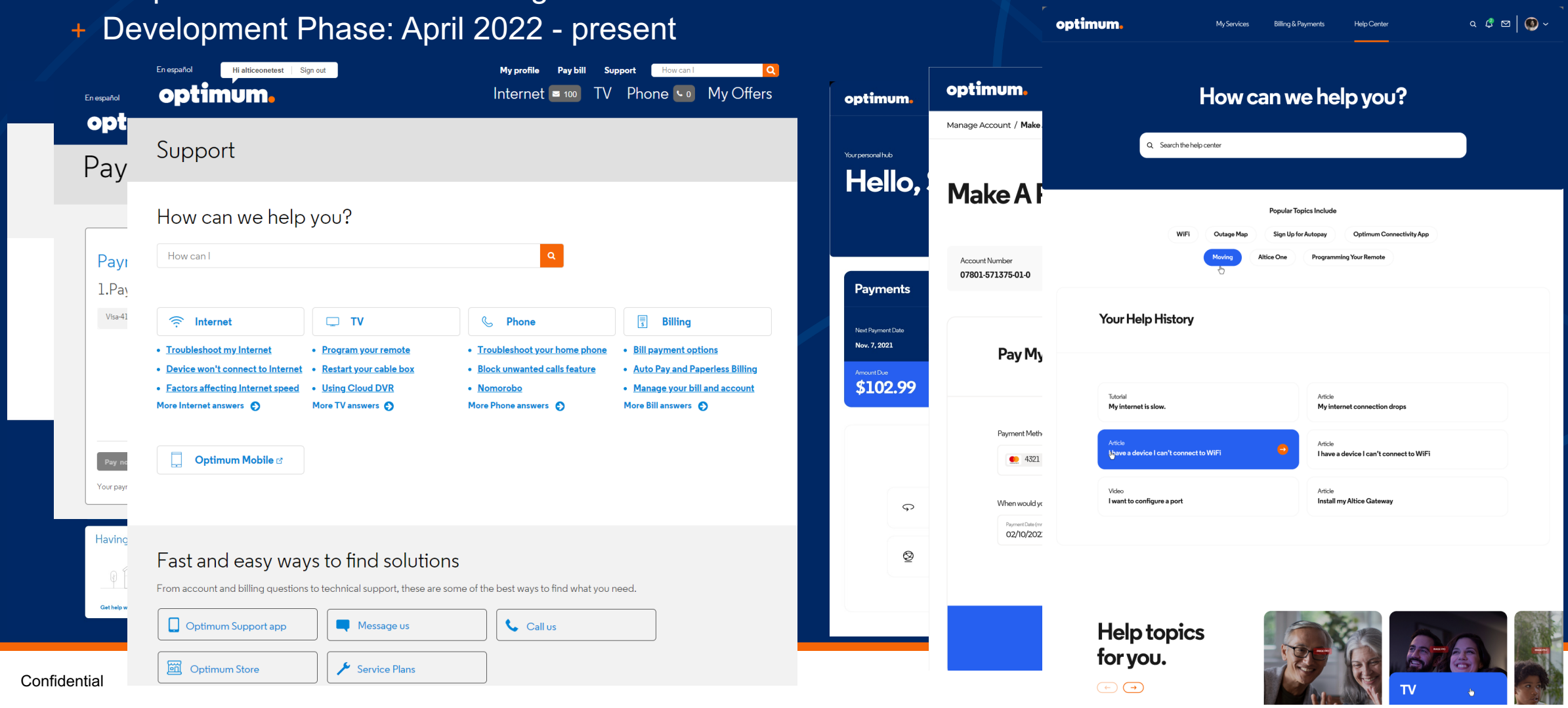
Objectives

- Improve and drive customers to **self-service** and **reduce calls for support**
- Integrate with technology stack with a new front end and updated integration layer (Middle-layer APIs) to reduce custom front-end coding of business logic and simplify the implementation of new features
- Provide personalized support content to customers based on services and equipment
- Migrate the customer portal to the **.com** domain to **drive SEO and discoverability** for prospective customers

Customer Portal Redesign Project

Project kicked off mid-2021

- + Requirement Collection & Design Phase: 9 months
- + Development Phase: April 2022 - present

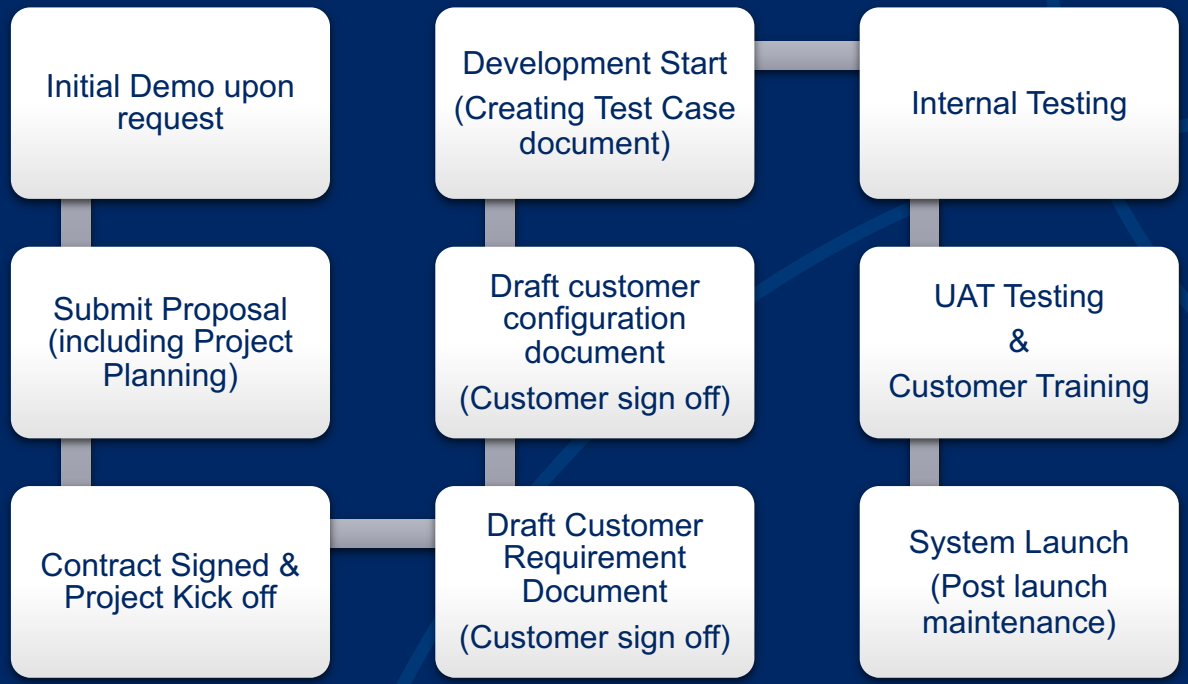


Waterfall and Agile comparison Chart

	Waterfall	Agile
Timeline	With defined end goal and fixed timeline	Need experimenting on different directions, schedule adapted to constant changes
Flexibility	Planning before execution, process is defined start to finish	Values short bursts of work, in “sprints”, plan-execution-feedback process repeating
Budget	Fixed budget	Flexible
Client Involvement	Minimum client involvement once end goal is set. Client can provide feedbacks only at the time of deliverables.	Including client's engagement at every step, constant feedback is needed every sprint.
Complexity & Risks	Project team with accumulated experience from past similar projects, risks can be identified easily	Brand new project with high-uncertainty, not enough experience, massive/complex scale, risks cannot be easily identified
Suitable for	Projects with clear and specific vision, can be done with linear progression	Projects where outcome heavily depend on research and testing, requires a lot of room to adapt and change course.

My Waterfall Projects

- Centralized system managing industrial wastes under pretreatment program.
- Target Users: Wastewater treatment plants (EPA affiliated government agencies)
- Project life cycle:



Customer Portal Redesign Project

WHY Agile?

Evolving environment – What happened?

- Lost of key team player – internal dev tech lead
- Company strategic priority shift – adding “Rebrand” project with an earlier launch date pulling shared resources away
- Change of direction from Higher management – Splitting Portal and App development into two projects
- Change of direction from Higher management – Merging B2B sales department with B2C, thus adding B2B portal into B2C portal project
- Constant discovery of business gaps after researching into legacy functionalities with years of patches
- Delays in decision making involving multiple shareholders

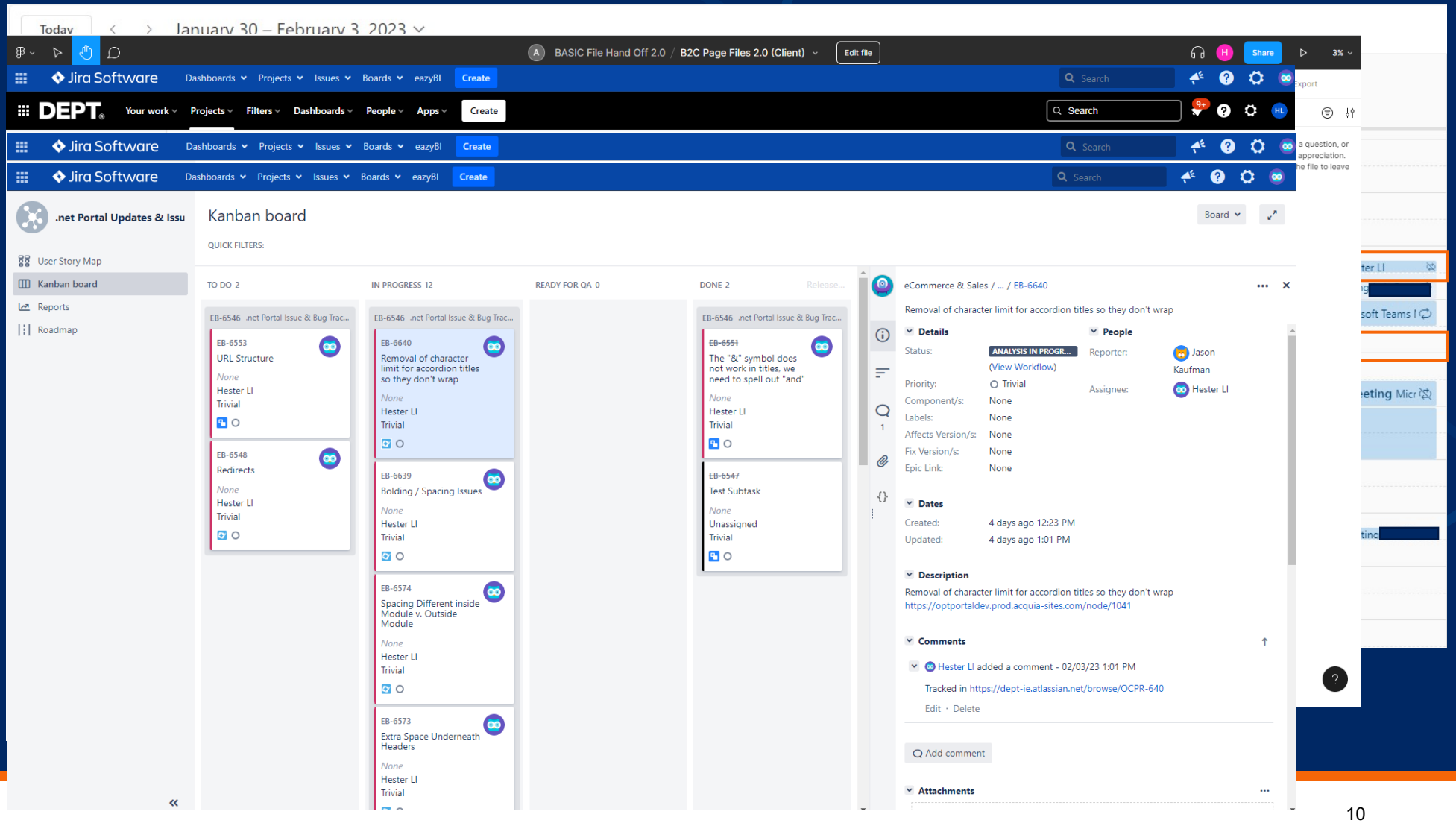
Agile Adaptions

- Kicked off B2B designing phase and reused majority of B2C designs
- Evaluated B2B functionality similarity to B2C and scoped for code reuse
- Divided B2C portal development into 3 major phases: MVP, Phase 2 and Phase 3
- Reevaluated project progress and
  - postponed MVP launch date for 6 months
  - Amended/extended contract with external dev vendors
  - Added budget to account for key member substitute and project delay

Customer Portal Redesign Project

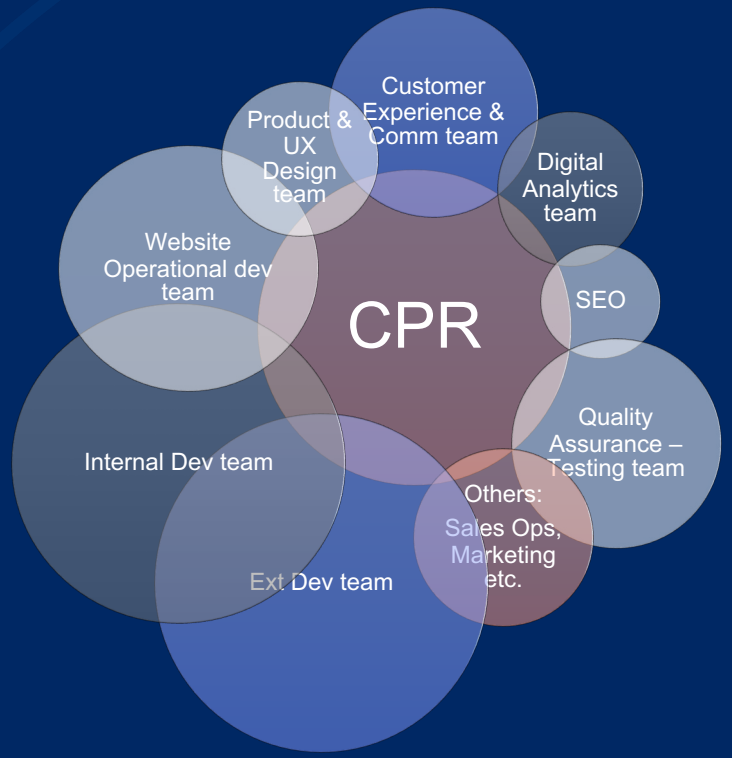
Management tools in use

- Outlook Calendar View
- Figma view for designs
- Jira Board for User Stories
- Multiple Jira boards for dev tasks tracking – cross team
- Team Task board



Customer Portal Redesign Project

Meetings



- Meeting is a communication tool to build consensus on project goals and deliverables across teams
  - Sprint planning and retrospectives
  - Checking progress
  - Trouble shooting technical issues
  - Business logic deep dive
  - Weekly
  - Kickoff meetings to initiate system integration with different external vendor tools
  - Working sessions for content reviews and entries etc.

How to plan your project?

3-Steps Planning

Step 1
Visualize your product launch day

Breaking down your final goal:

1. What's best the outcome of this project?
2. What are the key metrics?
3. Count your resources. What recourse do I have, what do I miss?

Tool: Product launch checklist

Step 2
Breakdown tasks

Breaking down your tasks in 2 ways:

1. By Deliverables
2. By Challenges

Breakdown standard

1. Transparent to all
2. Contribute value to project
3. Serve the goal
4. Can be finished by one person
5. Has personal take-away value

Tool: 3-Steps Task Breakdown Chart

Step 3
Set up Milestones / Checkpoints

Type of checkpoints to set up

1. Checkpoints by critical deliverables
2. Checkpoints by sprints
3. Set checkpoints to celebrate intermittent success motivate the team

Build your Agile Mindset

Be ready – changes always happen, and it's still doable

Feedforward > Feedback

Learn to identify risks, the moment you see risks, they've been defeated half-way!

Always remember your own goal!

(focus on what you can take away from this project)

A little bit of something beats a lot of nothing. Break the largest of difficult tasks into the smallest of steps and it can be done.

- Dan Millman

How to use ME: as your coach

Course Project

Develop a prototype of Solar Project Management tool connecting Sales, Construction crews, Operations managers and end-customers

Table of Content

Industry History and Trend

- **1950s**, scientists first discovered the photovoltaic effect, the process by which solar cells convert light into electricity. In the following decades that followed, advances in materials and technology made it a viable source of renewable energy.
- In the **1970s and 1980s**, oil crisis led to increased investment in solar energy and the development of new solar technologies. The first large-scale solar farms were built and the first grid-connected solar panels were installed on homes and businesses in these years.
- **1979 summer**, Solar panels was installed in the white house by President Carter. It had 32 solar panels installed on the White House West Wing roof in the summer of. A tremendous amount of data collected on how to make the panels more efficient and cheaper for regular households to install and utilize the power of the sun ever since.
- In the **1990s and 2000s**, further advances in technology and declining costs made solar energy increasingly accessible and affordable. The growth of the solar industry was further accelerated by government incentives, such as tax credits and subsidies, and by the increasing urgency of addressing climate change.
- **Today**, solar energy is one of the fastest-growing sources of renewable energy in the world, with millions of homes and businesses relying on solar panels to provide clean, reliable power. The continued development and deployment of new solar technologies holds promise for a future powered by clean, renewable energy.

Government Policies & the emerging opportunities in NYC area

- In New York City there are multiple Local laws that govern the direction of the industry. Local Law 97 dictates that for any buildings above 25,000 sqft must have either green agriculture on their roofs or solar panels to keep in line with the city's carbon emission reduction goals.
- New York City has set ambitious clean energy goals as part of its commitment to reducing greenhouse gas emissions and combating climate change. Some of the key goals include:
    1. **100% clean energy**: The city aims to transition to 100% clean, renewable energy sources for electricity generation by 2035.
    2. **Increased energy efficiency**: New York City is working to improve the energy efficiency of its buildings, which are responsible for a large portion of the city's greenhouse gas emissions.
    3. **Electrification of transportation**: The city is working to electrify its transportation system and increase the number of electric vehicles on the road.
    4. **Renewable energy production**: New York City is working to increase the amount of renewable energy produced within the city, including solar and wind energy
    5. **Green infrastructure**: The city is investing in green infrastructure, such as green roofs and street trees, to help mitigate the impacts of climate change and improve quality of life.

Government Policies & the emerging opportunities in NYC area

Continued

- Ever since the inflation reduction act of 2022, the landmark regulation stabilizes the renewable energy (mainly PV) market for the next 10 years locking in the federal **investment tax credit of 30%**. What that means for the banks is an opportunity to create and establish a marketplace with the Fed and treasury to create loan products that pass on these savings to the end user. The flow of money in the next couple of years from banks will be tremendous, any estimate will be speculation at this point.
- The solar industry has a significant opportunity for growth as the demand for clean and renewable energy sources increases. Solar technology has advanced and become more **cost-effective**, making it a more attractive option for both residential and commercial use.
- Governments around the world are also providing incentives for the adoption of solar energy, which is further driving the growth of the industry worldwide. With concerns about climate change and the need for sustainable energy solutions, the solar industry is poised for continued growth and expansion in the coming years

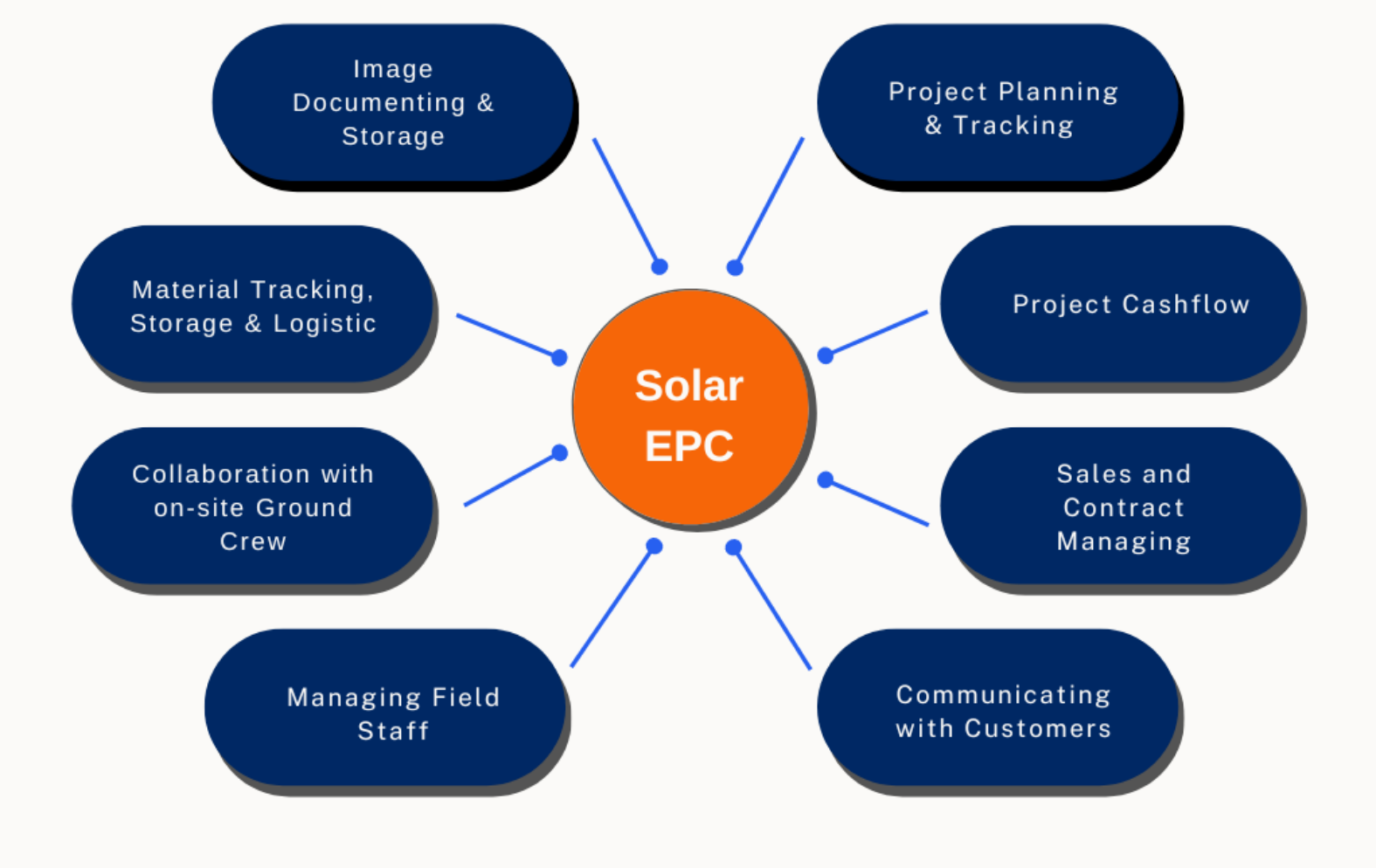
Challenges & Gaps for Solar Industry

There are several challenges facing the solar industry in general:

- **Grid Interconnection**: Integrating large-scale solar projects into the existing power grid can be complex and challenging, particularly in regions with outdated infrastructure.
- **Financing**: Although the cost of solar technology has decreased, financing remains a challenge for many projects, especially for smaller, residential installations.
- **Policy and regulatory uncertainty**: Changes in government policies and regulations, particularly at the state and federal level, can create uncertainty for the solar industry and hinder its growth.
- **Solar panel recycling**: The increasing volume of solar panels reaching end-of-life creates a growing challenge for the industry to recycle and dispose of these panels in an environmentally responsible manner.
- **Competition from fossil fuels**: Despite the growing popularity of solar energy, it continues to compete with traditional fossil fuels, which are often subsidized and have established infrastructure and distribution networks.

Challenges & Gaps for Solar EPC

Engineering, Procurement and Construction



Value Proposition

An EPC software solution requires the following features to fully support each installation project's whole life-cycle:

+ Instant communications
+ Photo/Images taking/documentation
+ Project Management tools
+ CRM (Customer Relationship Management) tools
+ Document organization
+ Financial tools with payment installment tracking
+ Multi-portals interface with controlled access to different functionalities and shared data source
+ …

Target Users

- Staffs involved in day-to-day Solar EPC business
  - Sales Reps
  - Operations Managers
  - Boots on the ground teams
    - Site surveyors
    - Construction managers
    - Engineering/permitting team
    - Closeout department
- Residential & Commercial consumers

Software solutions in the market today

- Current CMR/Project Management tools tailored for residential solar projects like:
  - Enerflo.io
  - Minski.io
  - Scoop.solar
  - octabees.com
  - Sitecpature.com

- Marketing, PM, Process Automation tools in general that requires customization by users themselves:
  - Hubspot
  - Asana, Monday.com … etc.
  - Zapier

Each of these tools are front facing, none of these tools currently assists with the backend part of the business

Minimum functional requirements in prototype

- Photo capabilities so you can assign certain photos to be mandatory or optional (eg: CompanyCam, or Scoop)
- Project level communication and organization (eg, Asana / Slack / Monday.com etc) where each project can have sub projects, those sub projects can be automated (eg, Salesforce or HubSpot) shows how long a project has been in a certain stage AND how long a sub task has been open.
  - Reminder functionalities to remind task owners when the due date is approaching
  - Each task can be expanded or contracted with checklist
  - Each sub task has its own line of communication and email chain, and one can go into the portal for each task or project and see communication based on sub task all in one place.
- Sales backend KPI tracking functionality with the following typical Solar EPC project stages
  - Contracts signed
  - Initial notice to proceed from the bank for funding
  - In que/in progress
  - Interconnection management
  - Procurement/equipment logistics
  - Closeout
  - Post install inspections
  - Permission to operate from the Utility

Course Evaluation Criteria

Application of suggested Agile tool Put the Agile PM methodology into real day-to-day practice	10
Completion of minimum 4 functionalities Have a solid workflow to support using these functionalities	25
Balance between complexity and user-friendly interface To evaluate how easy for user to navigate between functions without training	10
Successful Demos (both demos) of the prototype Visual design, logic, confidence and smooth of delivery of the demo	20
Capability to identify hidden requirements and risks Requires extensive communication and team collaboration	25
Complete set of deliverables User stories, task tracking board, Retrospective reports (in writing, or video etc.	10
Total	100

Bonus Value

1 Personal Bonus Points

Taking on being the team leader with demonstrated leadership

+ 5 bonus points for being the team lead
+ 10 bonus to team lead points if your team ranked among top 25%, 5 bonus to other team members for supporting your leader.

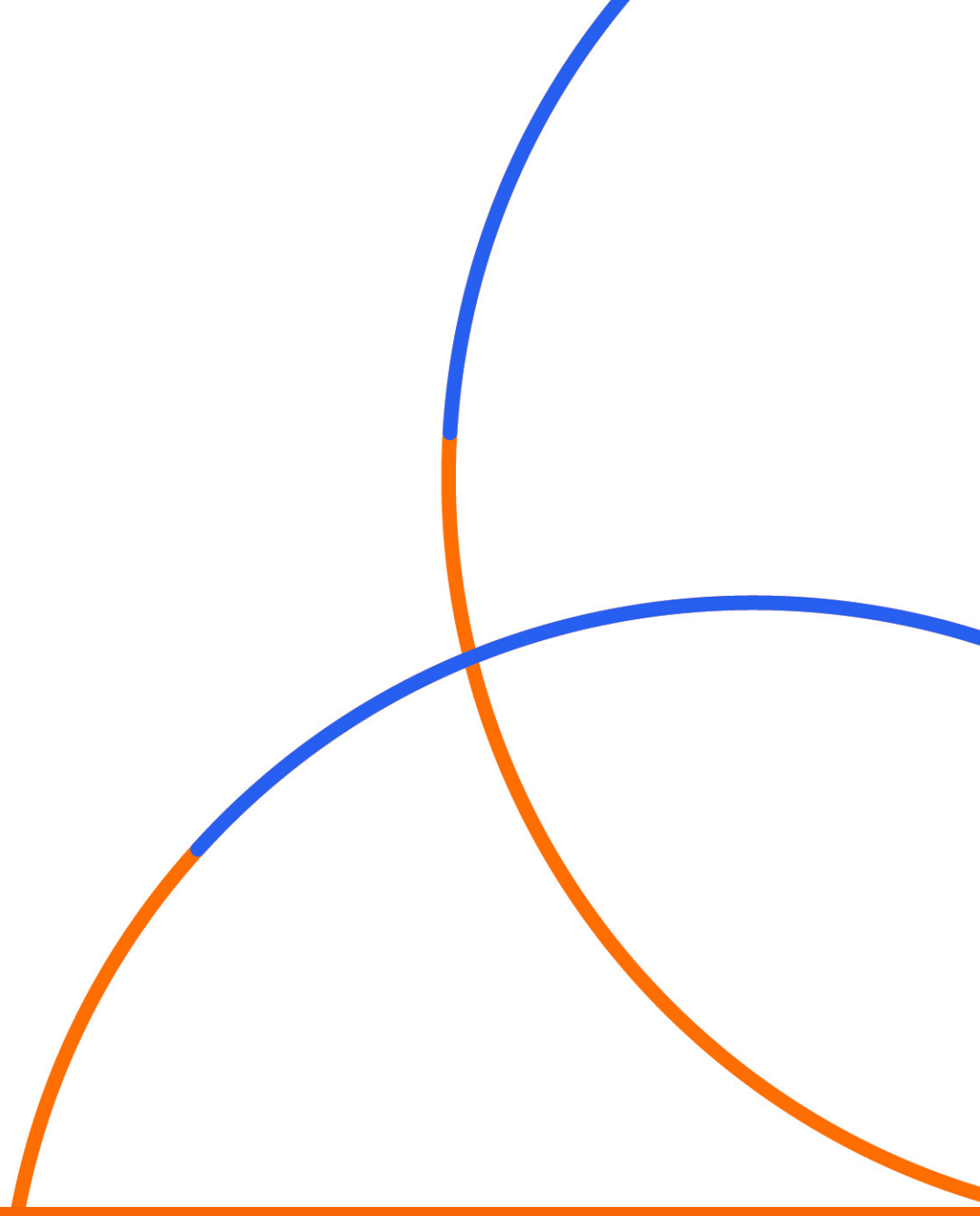
2 Recommendation Letter & Internship

Opportunities to receive recommendation letters and internship in related companies.

3 Turn Your IP into real product

Project is based on real gap in the Solar industry, a solid prototype could lead to real investment and future project into implementation.

Q & A



Appendix

Product Launch Checklist

Questions	Answers
What's my most important goal from this project?	
What accomplishments I have to achieve to complete my goal?	
Who are my core target customers?	
How can my product satisfy their needs?	
What are the essential elements that cannot be missed?	

3-Steps Task Breakdown Chart

Goal Breakdown			Collaborator	3
1 Task	2 Deliverable	Task Owner