March 15
Project Management User Group

Applying Agile Project Management Practices
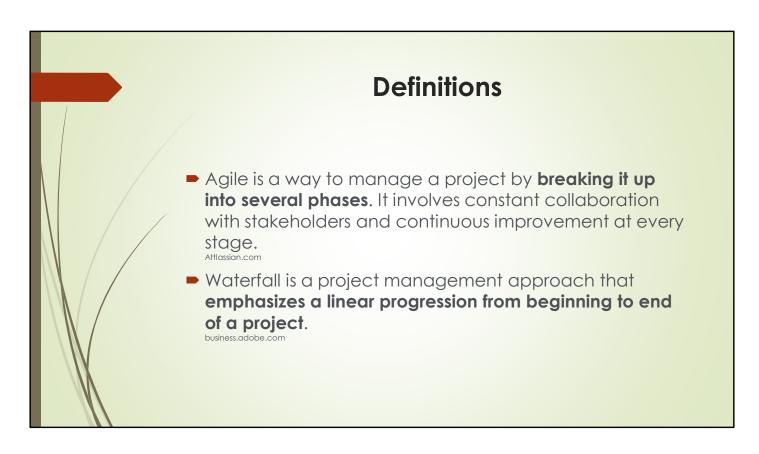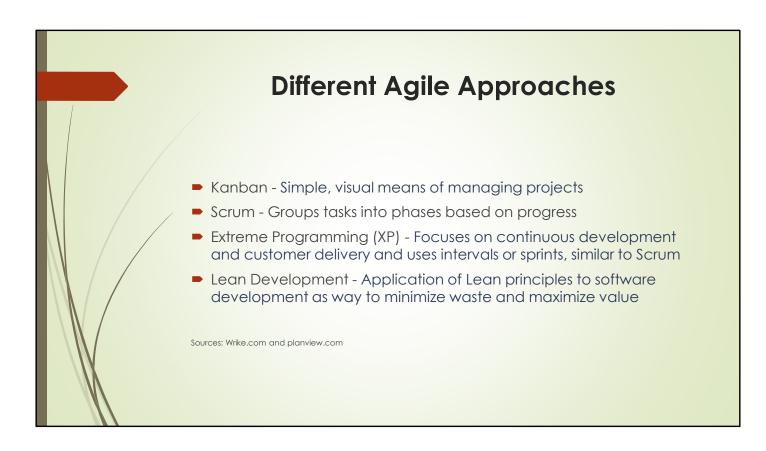
in a

Waterfall-centric Environment

Today, in response to a PMUG subject suggestion, a panel of state staff will discuss adapting Agile project management practices in a state Waterfall-centric environment.

Definitions

- Agile is a way to manage a project by **breaking it up into several phases**. It involves constant collaboration with stakeholders and continuous improvement at every stage.
  Attlassian.com

- Waterfall is a project management approach that **emphasizes a linear progression from beginning to end of a project**.
  business.adobe.com

Here are definitions for Agile and Waterfall project management methodologies. [Read aloud]

Different Agile Approaches

- Kanban - Simple, visual means of managing projects
- Scrum - Groups tasks into phases based on progress
- Extreme Programming (XP) - Focuses on continuous development and customer delivery and uses intervals or sprints, similar to Scrum
- Lean Development - Application of Lean principles to software development as way to minimize waste and maximize value

Sources: Wrike.com and planview.com

Kanban is a simple, visual means of managing projects that enables teams to see the progress so far and what's coming up next. Kanban projects are primarily managed through a Kanban board, which segments tasks into three columns: "To Do," "Doing," and "Done."

Scrum is similar to Kanban in many ways. Scrum typically uses a Scrum board, similar to a Kanban board, and groups tasks into columns based on progress. Unlike Kanban, Scrum focuses on breaking a project down into sprints and only planning and managing one sprint at a time. Scrum also has unique project roles: Scrum master and product owner.

Pros and Cons of Agile

Pros	Cons
Promotes development environment best practices	Simple to understand but hard to do well
Requirements emerge as understanding matures	Harder to predict what will be delivered
Flexibility can be higher	Requires continual commitment and time from the business or users (e.g. Product Owner) and developers
Communication between developers and those who accept and use deliverables	Intensive for both developers and users

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Some Pros for Agile project management methodology are:
Agile promotes some of the best practices found in development environments.
Some of the risk in a project should be reduced as the output of developers is reviewed early and constantly during development.
When projects are genuinely new they usually require creativity. Requirements can then emerge as understanding matures and grows.
Flexibility can be higher than traditional methods - although this is not guaranteed. Changes (e.g. in prioritisation) can be introduced at almost any stage.
Agile encourages or requires frequent communication between developers and those who will ultimately accept and use the deliverable. This should pay major dividends when effective. For example, feedback can be incorporated into future iterations as increments are delivered and reviewed by users or a Product Owner or both. False assumptions made by developers can be recognised very early reducing impact. Agile gives us continual opportunities to learn via this feedback.

Some cons of Agile are:
Agile is simple to understand in principle but hard to do well in practice. It requires real commitment and first attempts are not likely to go very well.
It is less predictable what will be delivered at the end.
Agile requires high levels of collaboration and very regular communication between developers and users (e.g. Product Owner). This is always desirable but may not always be feasible and requires continual commitment and time from the business and developers.

Agile is very intensive for both developers and users. There can be reasons that may prevent this for example if developers work on multiple projects at one time.

The only downside to the opportunities to learn is that people have got to be prepared to.

Pros and Cons of Waterfall

Pros	Cons
May provide more confidence of final product	Defining requirements up front not easy to do
Project team members don't need to be co-located	Communication far higher risk
More suitable for large-scale design or analysis and very high downstream changes	Risk higher in general
Have tools to model and manage interfaces and dependencies	Tend to be made up of 'teams within teams

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Some pros of Waterfall methodology are:
On well managed projects Waterfall may provide more confidence of what will finally be delivered earlier in the life-cycle.
Project team members don't need to be co-located although the risks associated with this must be managed carefully.
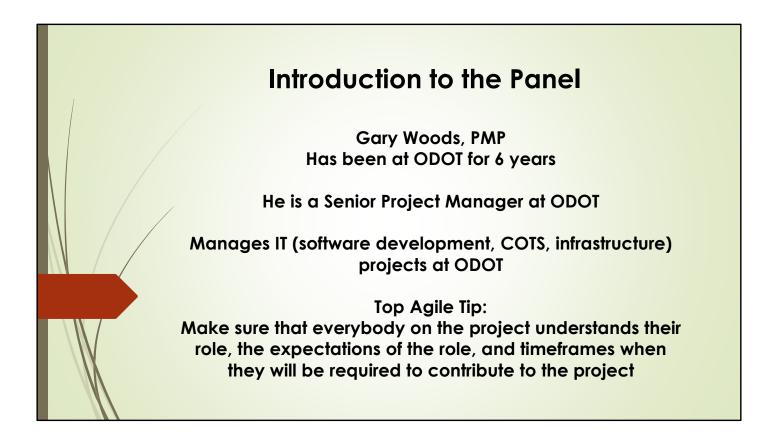Where large-scale design or analysis is required, or the impact of downstream changes to design is very high, this is likely to be a far more suitable approach.
Where there are many interfaces and dependencies outside of the basic product development, waterfall projects tend to have the tools to model and manage these.
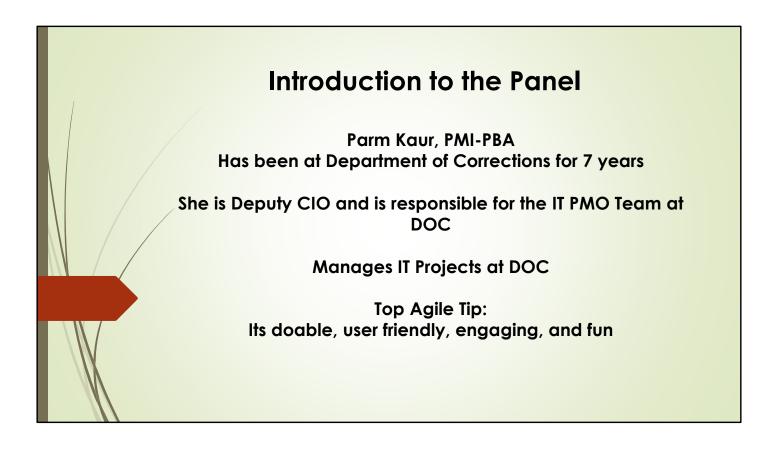
Some Cons for Waterfall are:
Many organizations and people really don't find defining requirements (up front) easy to do - especially early in some types of projects. The assumptions upon which early stage plans are based may be very flawed and too often are taken as being based on certainty.
Communication can be a far higher risk - especially when there is limited early review of outputs and deliverables or when one-way methods of communication are used to convey requirements.
Risk in general can be far higher with Waterfall, for example as the scope for invalid assumptions is unlimited. If you add this to the high cost of making changes later in a Waterfall project, it is easy to see why some are very expensive, over budget and late. Too often, assurance of products being fit-for-purpose is demonstrated very late in Waterfall projects.

Introduction to the Panel

Gary Woods, PMP
Has been at ODOT for 6 years

He is a Senior Project Manager at ODOT

Manages IT (software development, COTS, infrastructure)
projects at ODOT

Top Agile Tip:
Make sure that everybody on the project understands their
role, the expectations of the role, and timeframes when
they will be required to contribute to the project

Now, let me introduce you to our panel.

Introduction to the Panel

Parm Kaur, PMI-PBA
Has been at Department of Corrections for 7 years

She is Deputy CIO and is responsible for the IT PMO Team at DOC

Manages IT Projects at DOC

Top Agile Tip:
Its doable, user friendly, engaging, and fun

Introduction to the Panel

Bethany Ford, PMP
Has been at Oregon Department of Human Services /
Oregon Health Authority OHA: Office of Information Services
for 1 year

She is a Senior Project Manager for Project Solutions

Manages IT Projects at OHA

Top Agile Tip:
Make a conscious effort to use more visual requirements as
you manage agile projects.

Introduction to the Panel

Robert J. DeVassie, PE, PMP
Has been at Oregon Department of Transportation for 4 ½ years
and
in the Transportation industry public/private for 28 years

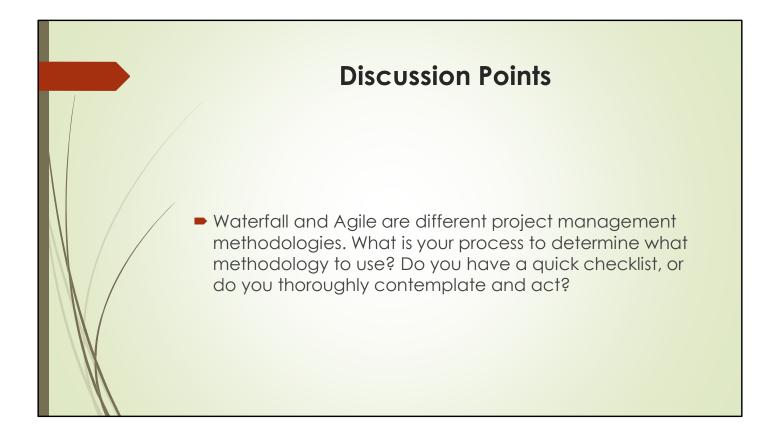**He manages mostly waterfall roadway and transportation projects at ODOT**

Top Agile Tip:
Be Flexible

Introduction to the Panel

Barbara Laughlin
Has been at Oregon Health Authority for 2 ½ years

She is a Senior Technical Project Manager and manages mostly software development and vendor developed projects at OHA

Top Agile Tip:
Trust and Teamwork are key to successful Agile projects.

Introduction to the Panel

Dan Feder
Has been at Oregon Health Authority Office of Information Services
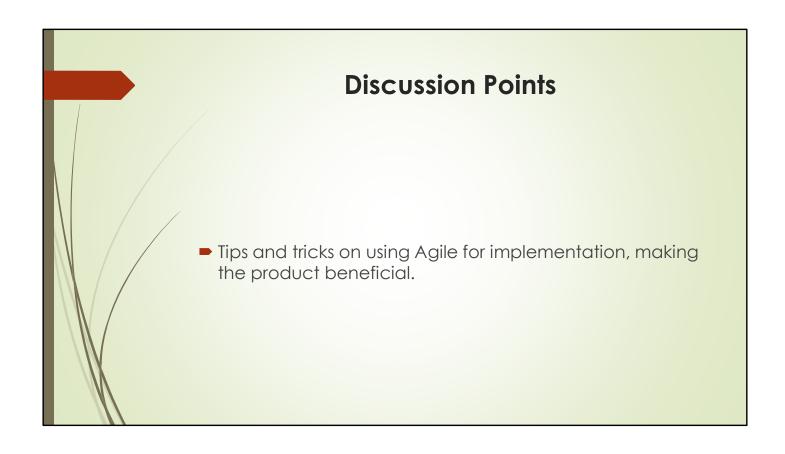**for 2 years**

He is a Business Systems Analyst and manages the following projects at OHA OIS: Get Vaccinated Oregon (GVO), Benefit Management System (BMS), snd Laboratory Information Management System (One LIMS)
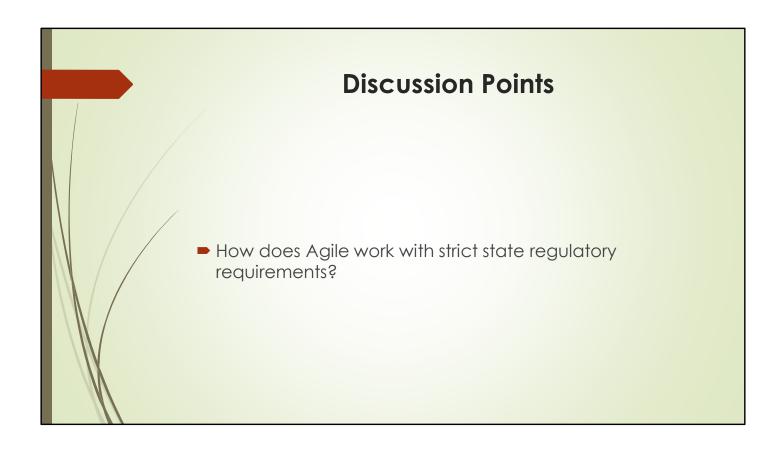
Top Agile Tip:
Get heavy business engagement and responsibility that translates into specific user stories that include user acceptance and do it more at the beginning of the project rather than the middle.

Discussion Points

- Waterfall and Agile are different project management methodologies. What is your process to determine what methodology to use? Do you have a quick checklist, or do you thoroughly contemplate and act?

Discussion Points

- How do you train your product owners (users)?

Discussion Points

- Tips and tricks on using Agile for implementation, making the product beneficial.

Discussion Points

- How does Agile work with strict state regulatory requirements?

Discussion Points

- What are the biggest Agile-related challenges within your organization?

Discussion Points

- Please share about how your agencies translate Waterfall-style portfolio planning into Agile execution.

Discussion Points

- What are some strategies you use to effectively manage dependencies across Agile projects?

Discussion Points

- Please speak about how you report on funded projects when Agile teams report progress in story points.

Discussion Points

- You have a lot of people listening, what's one or two things you would pass on to them about managing Agile projects within the state? What are your potholes?

Resources

- PMBOK 7 guidelines for what works better for Waterfall vs. Agile
- The Ultimate Guide to Implementing Agile Project Management
- PMI Waterfall Versus Agile, which approach is right for my ERP (Enterprise Resource Planning) project? https://www.pmi.org/learning/library/agile-versus-waterfall-approach-erp-project-6300
- Pros and Cons of Agile and Waterfall https://www.pmis-consulting.com/agile-versus-waterfall
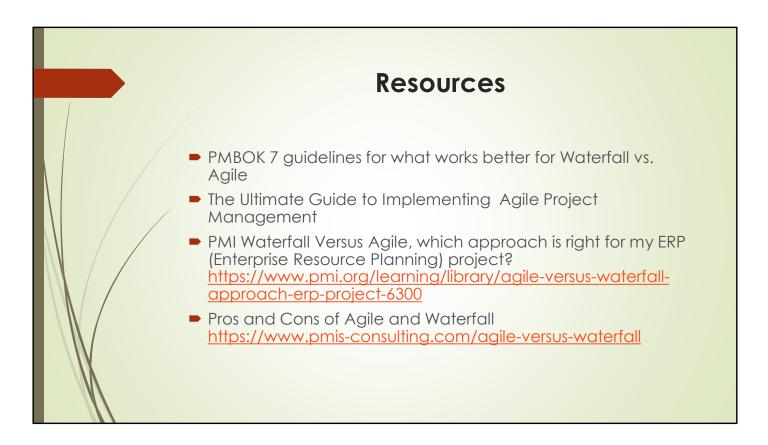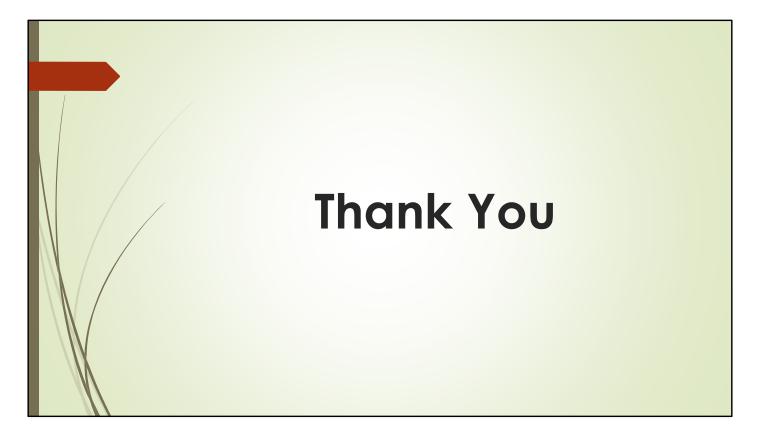
You can learn more about Agile and Waterfall Project management approaches by viewing the resources listed here

Questions

Now, we have [X] minutes left welcome questions from the audience by raising your hand or putting them in the chat and we'll answer as many as we can.

Thank You

[Turn off PP and read script]