



ICT in G4AW

service development and
provision

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Netherlands Space Office



G4AW

GEODATA FOR AGRICULTURE AND WATER

Netherlands
Space
Office



Characteristics of an ICT user- driven development project



Software Development Method

- **Linear**

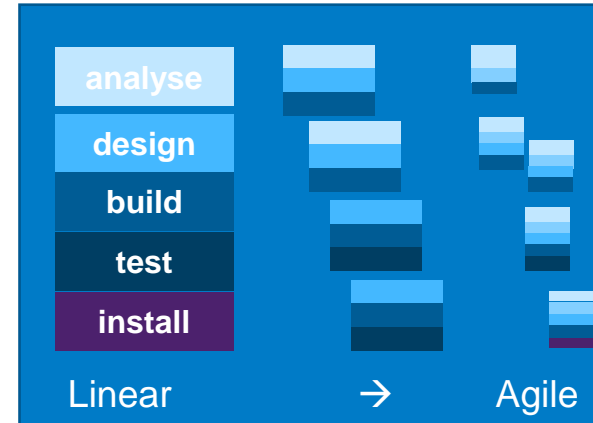
well (in-depth) planned, waterfall approach, well-defined goals, well-defined requirements and solutions, few scope change request, routine/repetitive projects

- **Iterative**

Planned, number of phases repeated in groups, well-defined goals, not all features of the solution are known but most functions are, learning-by-doing strategy

- **Agile**

incremental, iterative approach, well-defined goals, solution partially known, but most functions are, features and functions still to be defined, frequent changes, R&D projects



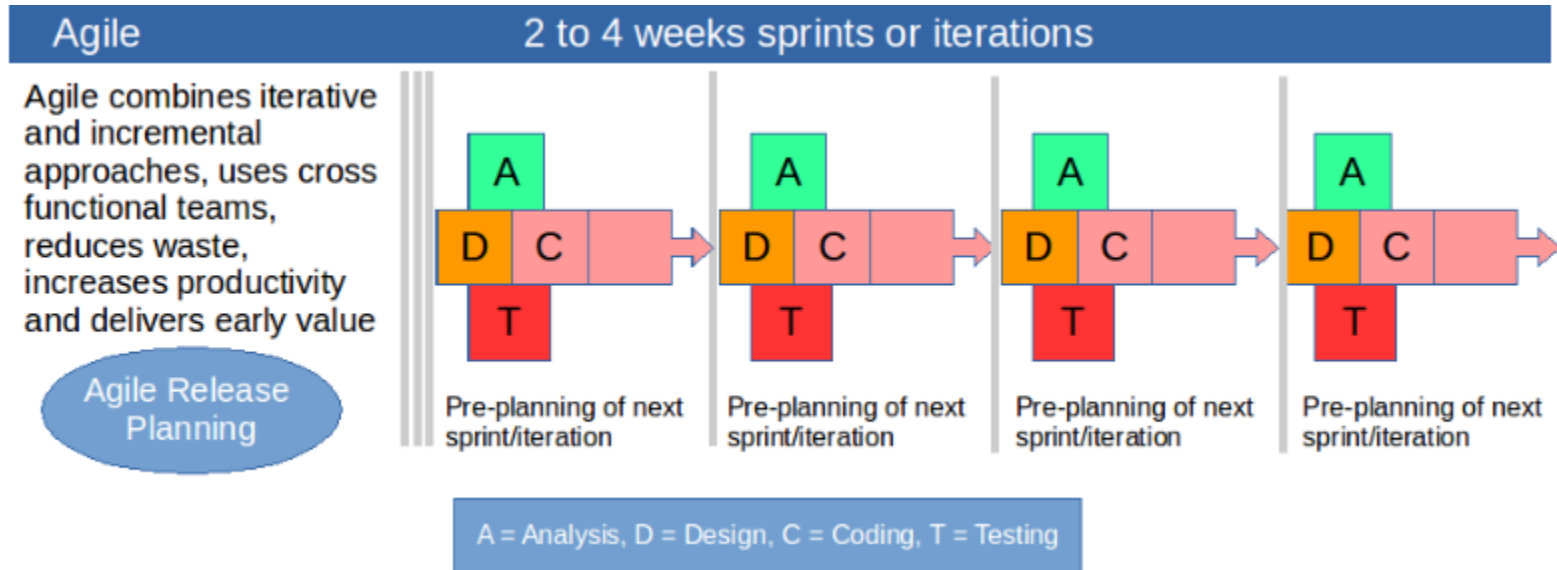


Software Development Method

	Advantages	Disadvantages
Linear	<ul style="list-style-type: none">• Project under control• Milestones are known and tracked• Resource requirements are known• Work distribution• Works well with inexperienced developers	<ul style="list-style-type: none">• inflexibility• long period of development• no business value until late in dev• heavy documentation• no focus on customer value
Agile/Iterative	<ul style="list-style-type: none">• Early and frequent review• changes between iterations• Adaptation to changing business conditions• No time waste on non-value added work• Significant business value• Rapid feedback	<ul style="list-style-type: none">• need meaningful customer involvement• unclear final solution• difficult to define what will be delivered• no focus on long-term goal at beginning• Lack of design documentation



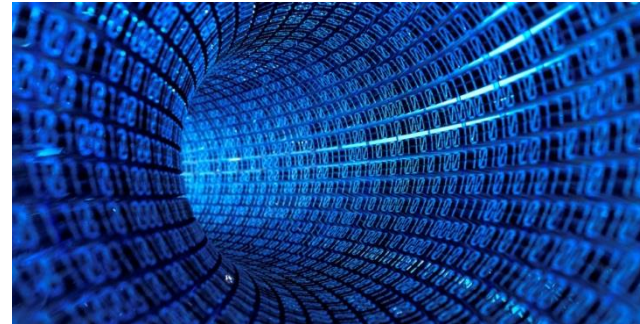
Software Development





Software Development Stages

1. Analysis – define user needs → derive user requirements
2. Design – develop (sub)system requirements → develop design
3. Coding/development – produce codes, applications, services
4. Testing – develop test plan, user involvement and testing, verify and validate
5. Implementing – develop implementation plan



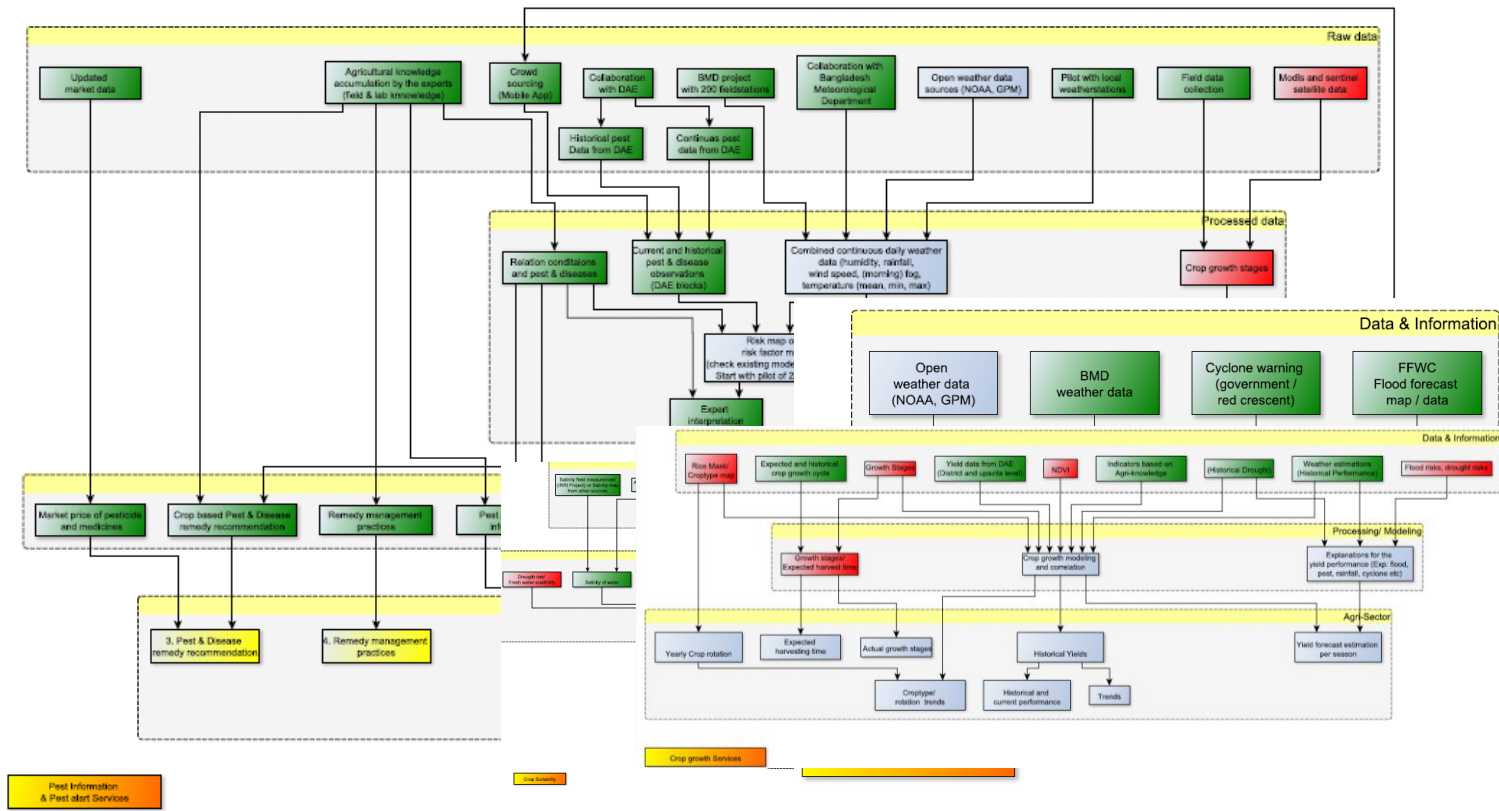


Software Documentation

1. Requirements – Statements that identify attributes, capabilities, characteristics, or qualities of a system. This is the foundation for what will be or has been implemented.
2. Architecture/Design – Overview of software. Includes relations to an environment and construction principles to be used in design of software components, Database Design Document.
3. Technical – Documentation of code, algorithms, interfaces, and APIs, test plan.
4. End user – Manuals (tutorials) for the end-user, system administrators and support staff.
5. (input to) Marketing – usability and acceptance



architectural design





Software Development Team (roles)

end users

customers

product/project managers

sales, marketing

system engineer

software architects

database administrator

database designer/developer

data analyst

application developers

usability engineers

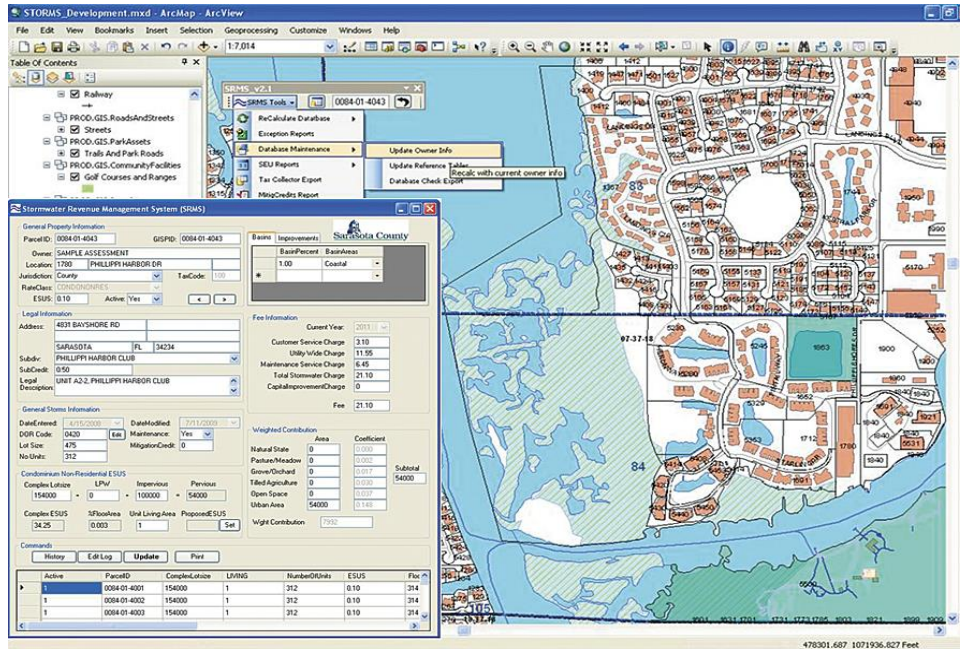
interaction designers

testers





Software Development User Interface

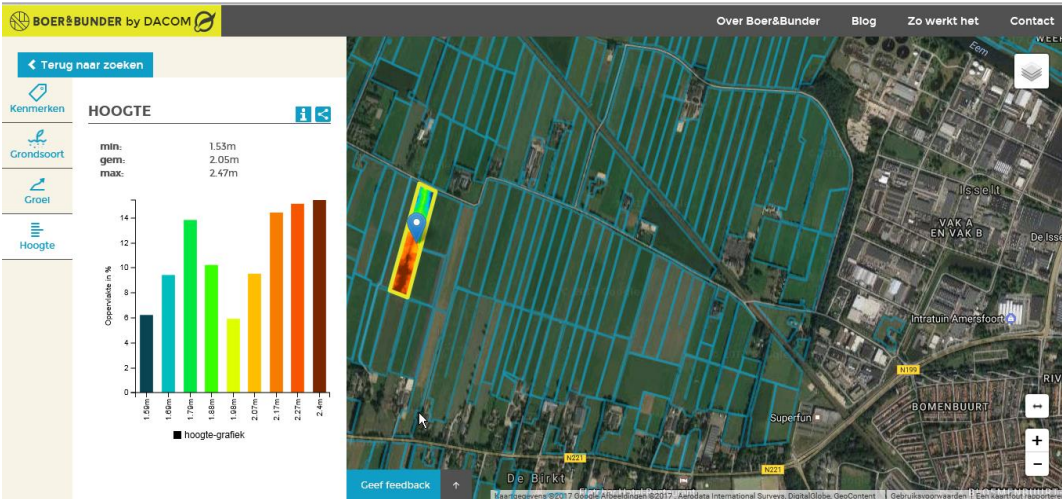


Typical GIS User Interface



Software Development User Interface

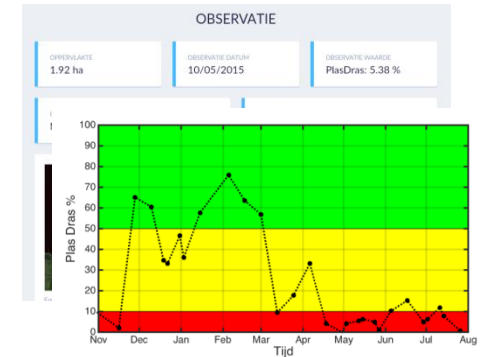
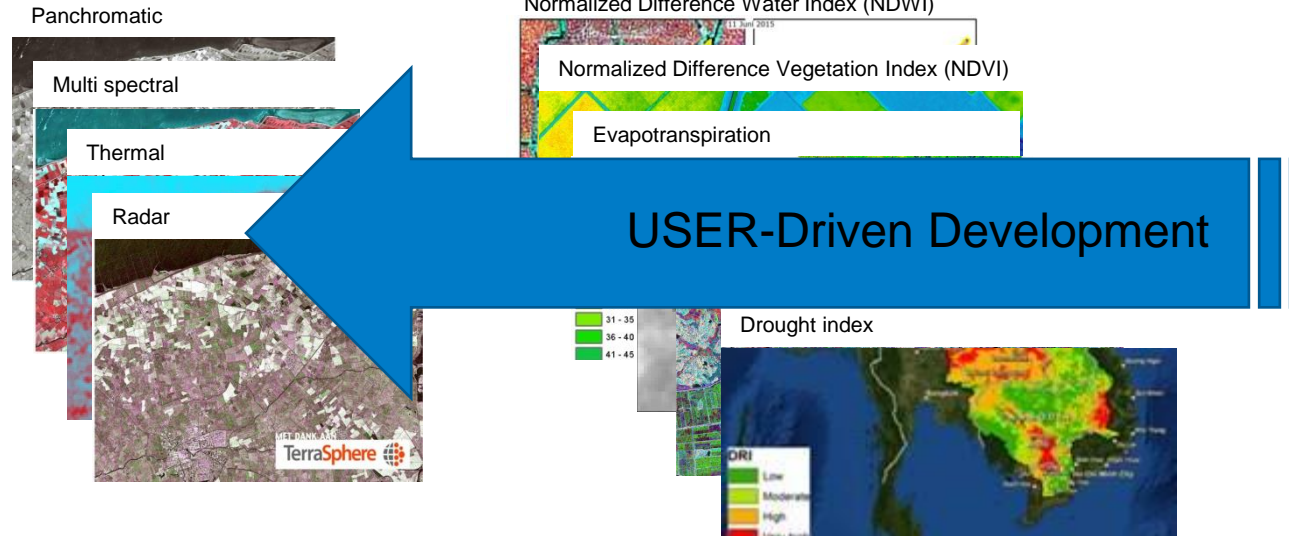
User-friendly Interface





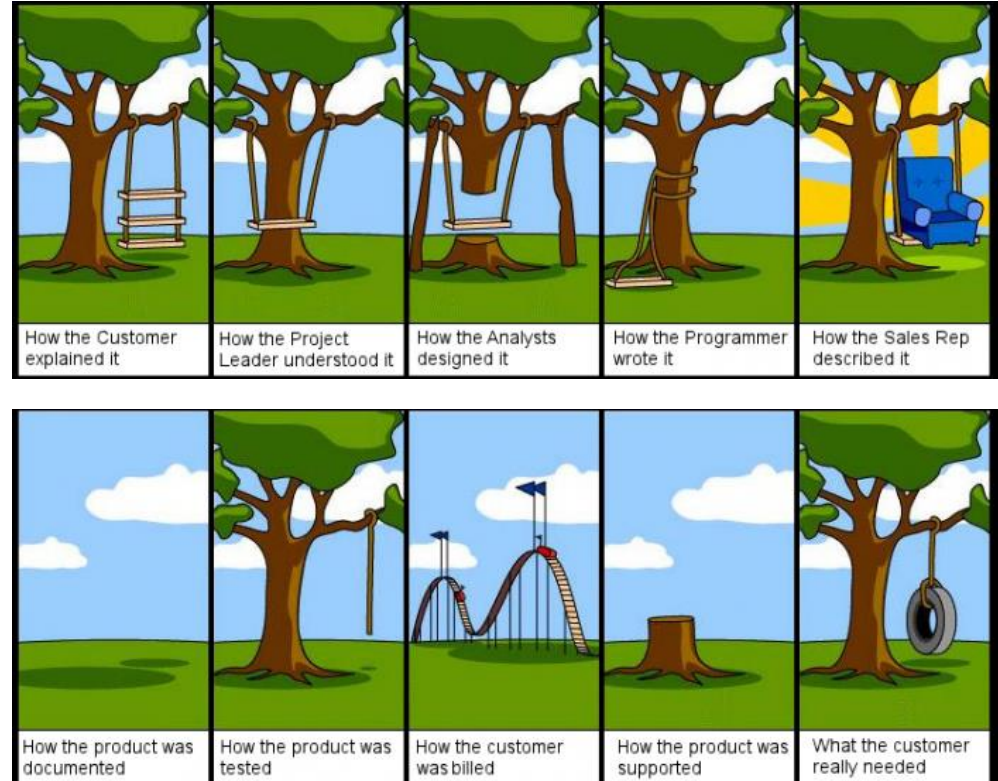
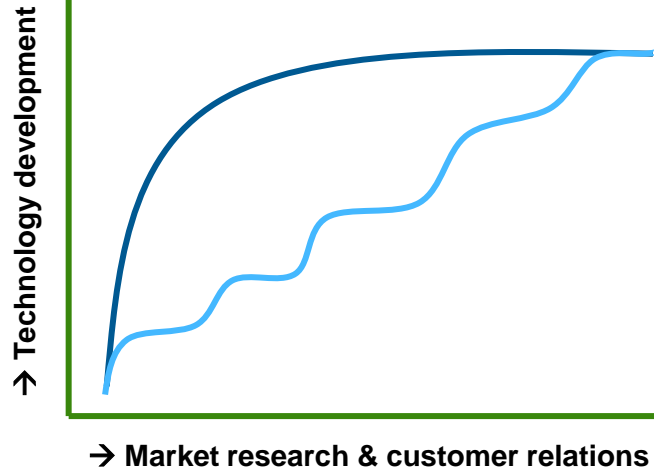
Software Development Content

Raw Data → Processed Data → Value added information services



Pest & disease service
Irrigation service
Planting advice service

Do you know your customer needs and service requirements?





Questions?





Thank you for
your attention

G4AW is a programme
commissioned by



Ministry of Foreign Affairs

Contact: g4aw@spaceoffice.nl



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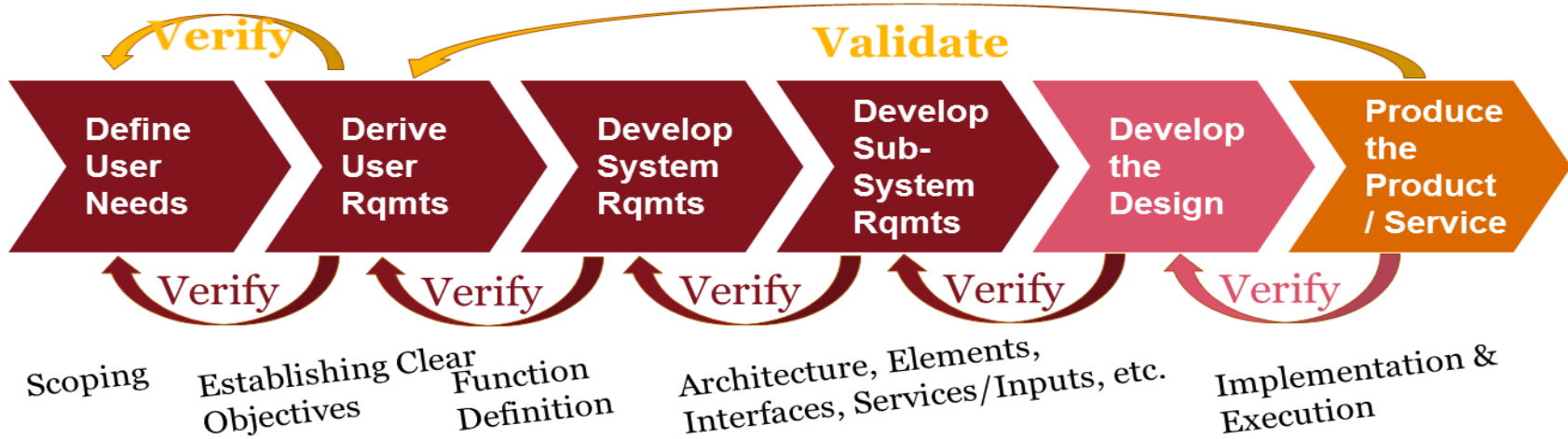
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User

User



Development
Roles

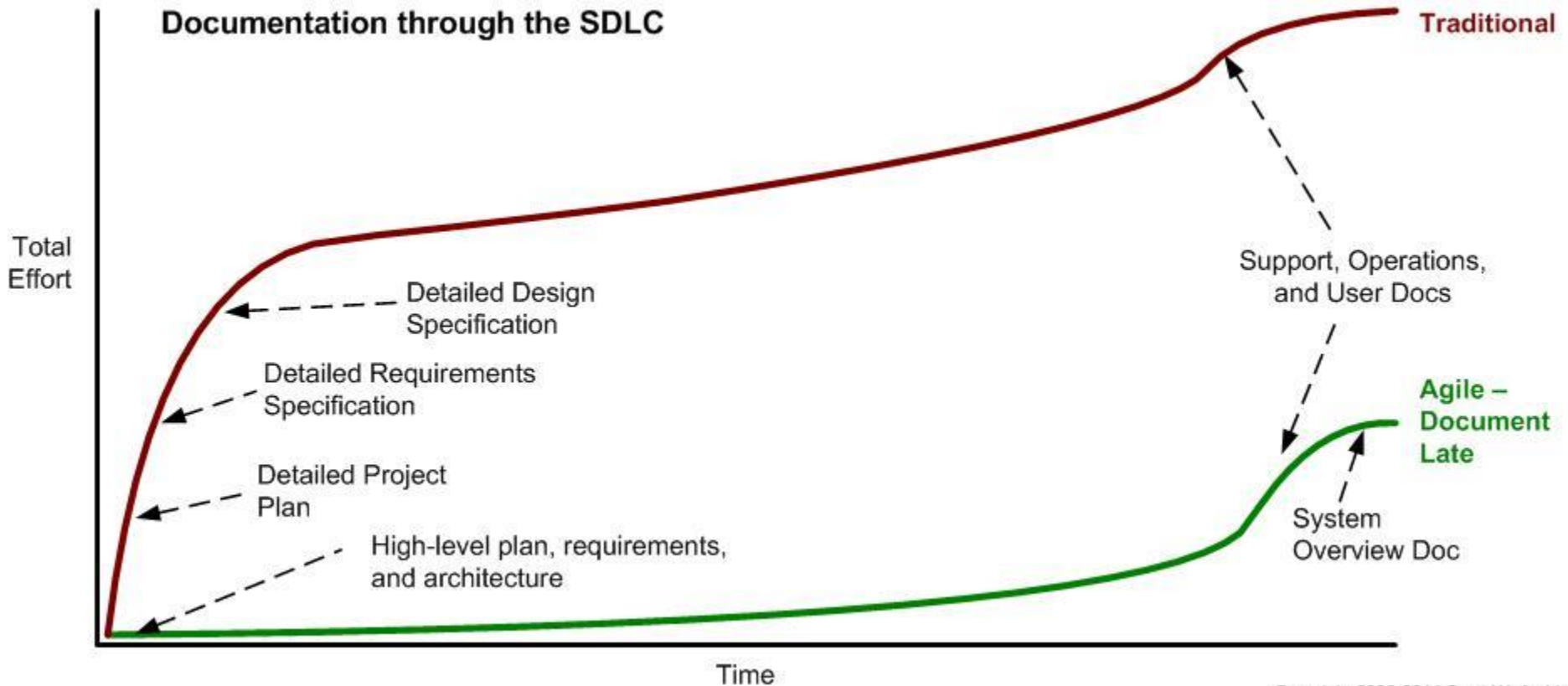
Systems Engineer

Developer

Producer



Documentation through the SDLC



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