

38th TOCPA International Conference

28-30 March 2018, Paris, France

Software development consistently within Time, Scope and Budget.... Is that possible? On-time delivery at 90 %

Edwin Woltering

ORTEC B.V., The Netherlands



Experience



Manager Software

ORTEC - Optimize Your World

Feb 2016 – Present • 2 yrs 2 mos

Zoetermeer

Managing the ORTEC department for development, support and maintenance of our standard product ORTEC Workforce Scheduling.
Practice the methodology Theory of Constraints - TOC



Senior Business Consultant

ORTEC - Optimize Your World

Apr 2008 – Feb 2016 • 7 yrs 11 mos

Zoetermeer

As Senior Business Consultant I am the link between the workforce planning and scheduling processes of our customers and the Software of ORTEC. I analyze workforce processes and advise in improving them for further optimization. I am an expert on ORTEC Workforce.



Coördinator Planning HR

NOS

2003 – 2008 • 5 yrs

As coordinator Planning I was responsible for the resource planning of the NOS. I was functional manager for 9 workforce planners. Responsible for planning & control on human resources.



Manager Planning HR

Dutchview / NOB

2002 – 2003 • 1 yr

Manager of the resource planning department of Dutchview / NOB which planned 500 employees.
Manager of 9 planners and 15 stage managers.



Teammanager

NOB / Dutchview

2000 – 2002 • 2 yrs

During this period the business unit of NOB I worked for changed into Dutchview.



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35

Years Active

1800

Customers

80M

Revenue

50

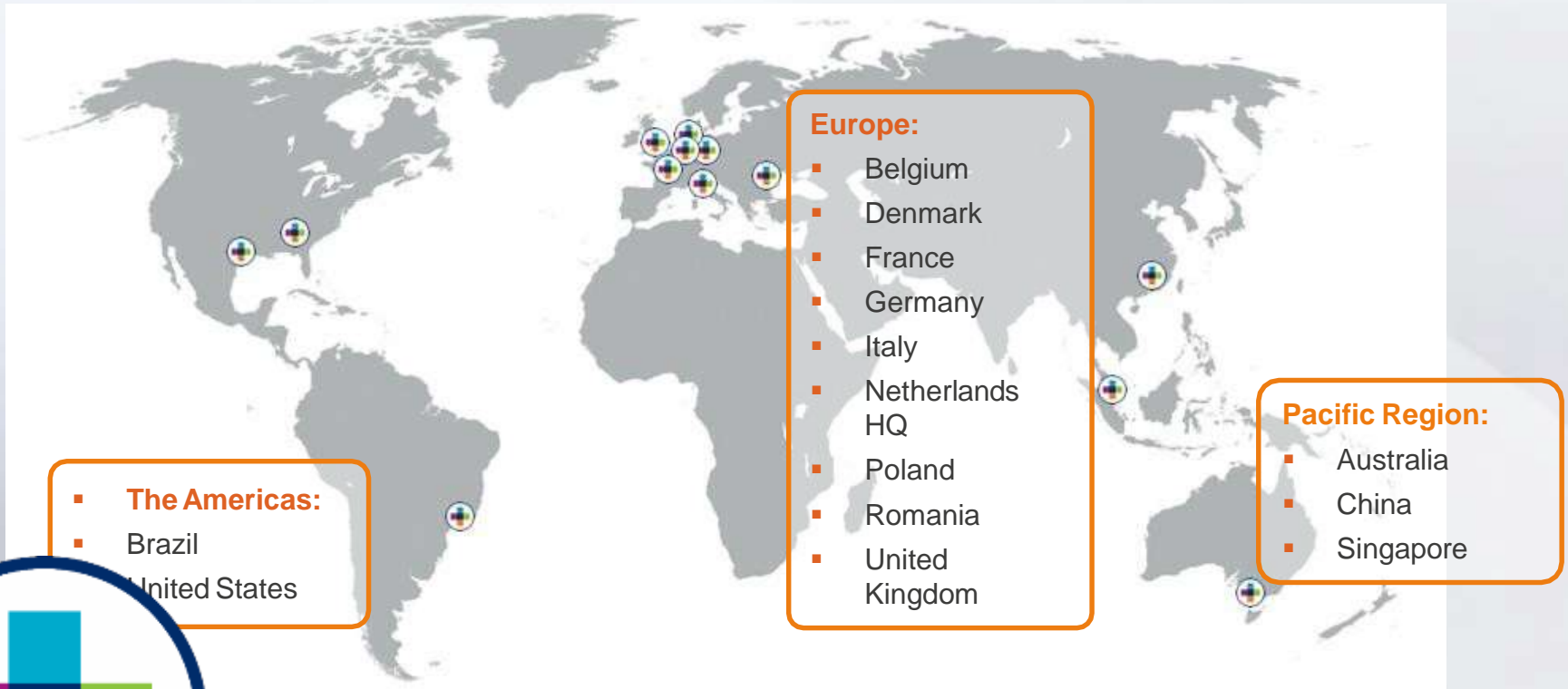
Countries

800

Employees

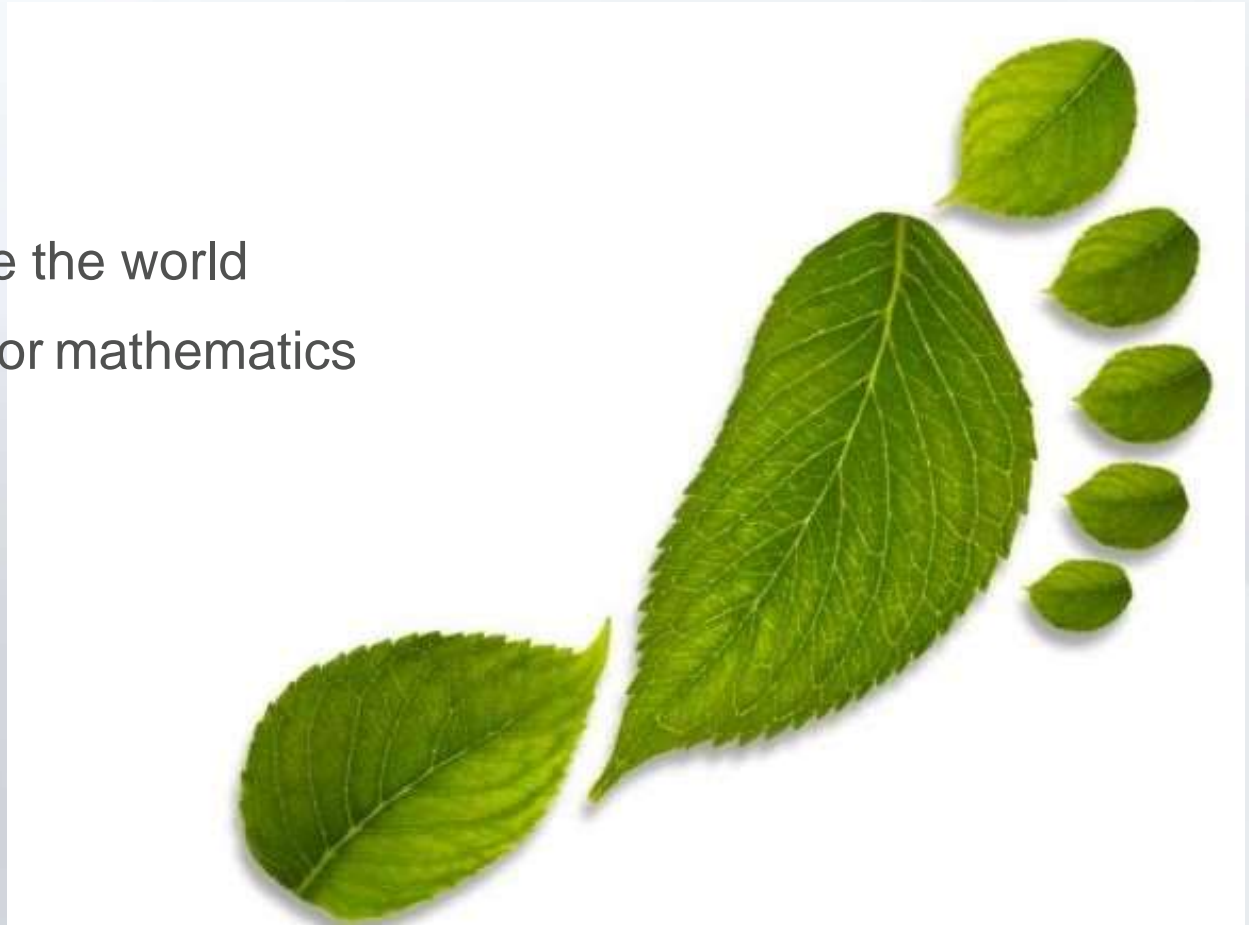


Where we are



Mission

- We want to improve the world
using our passion for mathematics



Solutions

Vehicle Routing



Load Building



Workforce Scheduling



Network Design



Field Service



SAP Solutions



Industries

Consumer Packaged Goods



Transportation



Oil, Gas and Chemicals



Health Care



Professional and
Public Services



Retail



Build sustainability



- ORTEC delivers directly to the three pillars of sustainability



Sustainability



■ ORTEC Workforce



■ Better work-life balance



ORTEC Workforce

Development

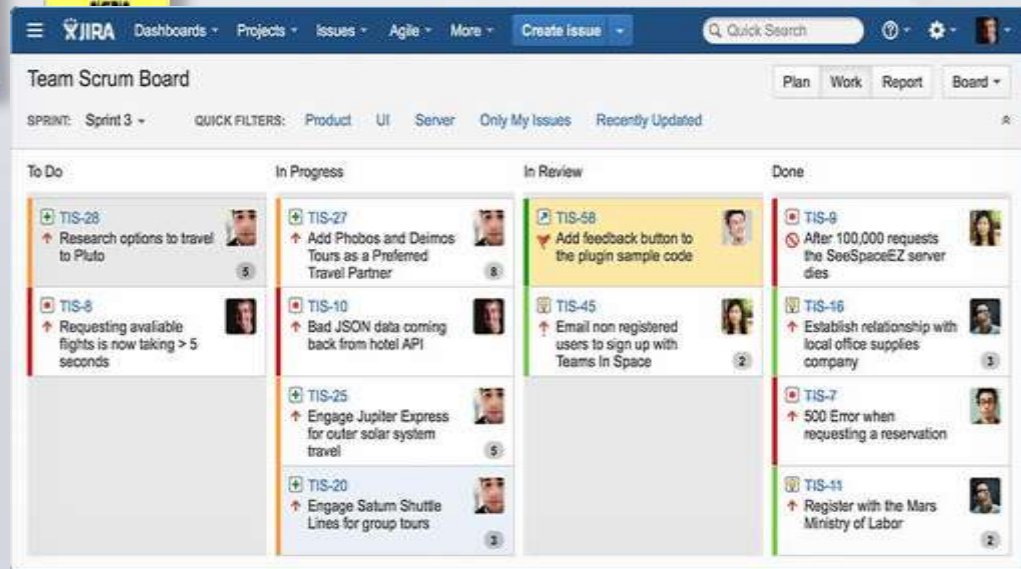
Maintenance



We use a lot of tools, but

AGILE SCRUM

Belgium



Goal:

- Develop software to support 'large environments' (>15.000 employees).

Development

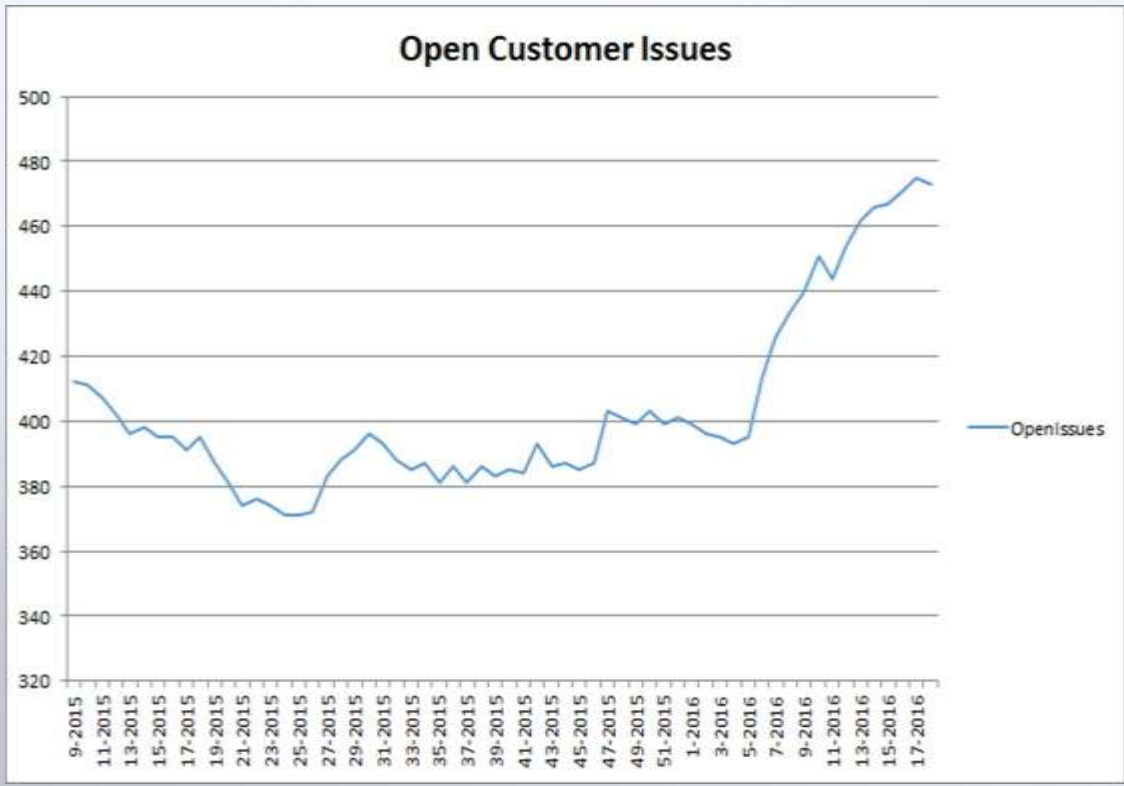
Problems

- Project going on now for **three years**
- **Hire people** from other departments and externally
- **Reliability**
 - Delivery dates are based on '**wishes**' instead of actual estimates
 - Estimates are not reliable
- **Projectmanagement** - No subproject is finished because of **changing priorities**
- **No focus on finishing** - subprojects and even tasks
- **Teamspirit low**
 - Team lead determines what happens when
 - Employees are unsure about what they are building – no big picture
 - Because the project was not finished on time there was a penalty



Maintenance

Maintenance



Maintenance

Goal

- Management: solve all problems
- Employees: solve problems that really need solving NOW

Problems

- **Huge backlog** of Must issues → 480 issues (output 10 per week)
- **No time** for analysis of 'weird' issues
- Must/Should/Could → '**Never**' folder / High prio should
- **Role team lead** → does the intake of new issues and assigns tasks to team members
- **Specialists** - What the issue is about determines who will do it
- **Many escalations**
- Natural variation in intake is invisible because the **highs fill up the lows**
- **No focus on effort**, only on number of issues



Help! The developer is drowning..



From Problems to UDE's

- Backlog is too high
- Leadtimes are often too long
- Priorities are changing constantly
- Customers are dissatisfied
- Quality levels are not met
- Team members are exposed to high workloads

Satisfaction

Quality

Flow

What to Change & How



Community of Trust AND Unity of Purpose (Necessary Conditions)



Budget
Performance
Tasks
Processing time
Lead time
Reliability

The Goal

ORTEC Workforce

Let ORTEC Workforce be valuable for customers, chosen prospects and ORTEC itself

- Happy customers
- Happy employee
- Happy financials



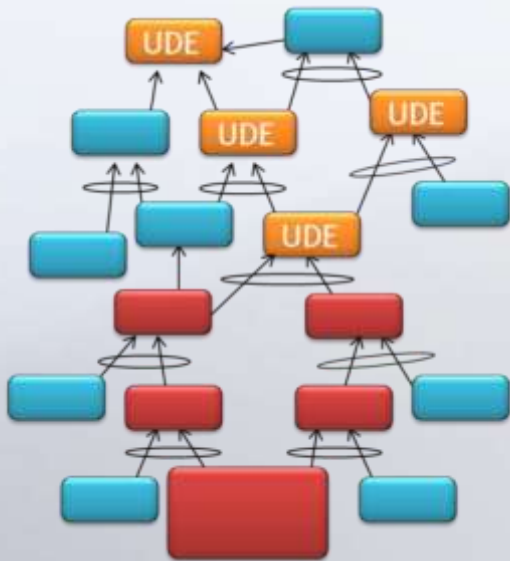
Target

90% of all OSD Workforce deliverables are delivered before or on the agreed date

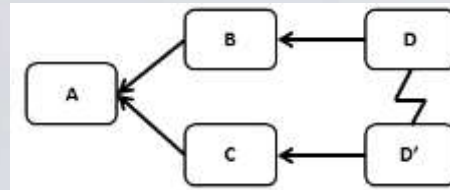


Development

Goal: Valuable product



1. Performance & Stability
2. Look & Feel



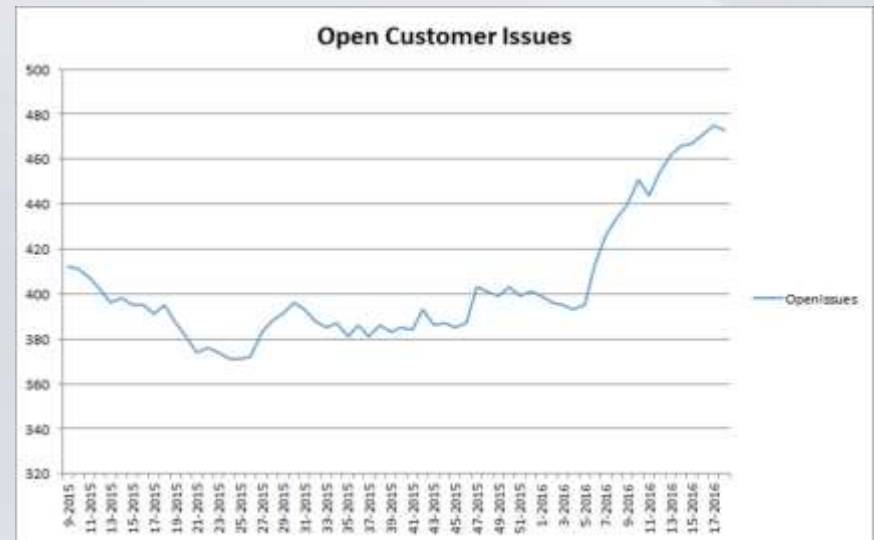
Define Product & Services Catalog

Maintenance Data from: 01-01-2017 Duration: 64 w				In: week: 10 points total: 1033 points				WIP: 34,5 points				Closed: Week: 8 points Standard: 19 points				Closed: Total: 998,5 points Standard: 1219 points				Reliability cards: Week: 75% 6 weeks: 81,8% Total: 86%			
Product	In		WIP	Closed				Lead time			Lead time Little (days)		avg. processingtime (days)		Reliability standard: 90%								
	Week	Total		Week	Norm	Total	Norm	Week	Total	Norm	Week	Totaal	Week	Total	In time (week)	%	Closed (6 weeks)	In time (6 weeks)	%	In time (total)	%		
Mt-Patch	3	114	3	2	1	111	64	4,5	4,5	1	7,5	8,6	0,16	0,11	2	100%	12	12	100%	109	98%		
Mt-XS	1	138	2	2	1	136	64	3	14,5	3	5	4,7	0,96	0,34	1	50%	12	10	83%	131	96%		
Mt-S	2	283	8	3	2	275	128	7,8	11,6	5	13,3	9,3	0,96	1,09	3	100%	15	10	67%	238	87%		
Mt-M	2	196	8	1	5	188	321	23,6	12,9	8	40	13,6	4,68	2,58	0	0%	5	4	80%	133	71%		
Mt-L	0	6	0	0	0,5	6	32	0	19,2	10	0	0	0	3,75	0	0%	0	0	0%	5	83%		

1. Size: xsmall, small, medium, large fixes
2. Throughput: 4 pnts (dev days) per person per week
3. Lead Time: Every project, subproject and issue contains a due date
4. Reliability: the amount of work within the produced within the norm

Excessive Work in Progress?

- Variation & Dependencies
- Waiting Times
- Multitasking
- Longer Leadtimes, Less Throughput
- Increasing pressure
- Decreasing quality

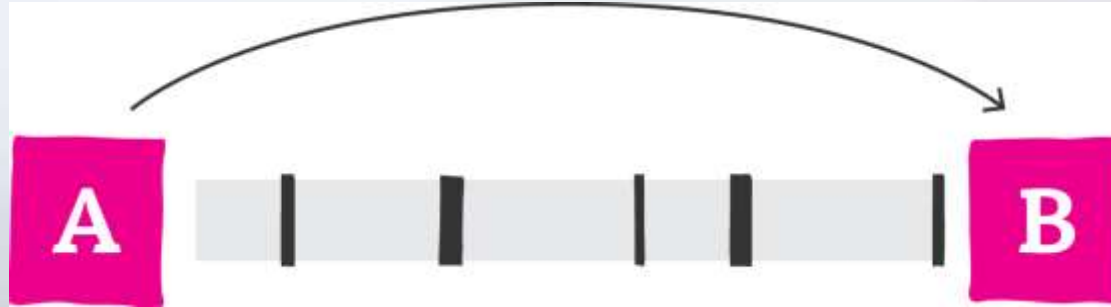


Reduce WIP

- Close non-important issues
- Create special teams to remove backlog
- Stop multitasking



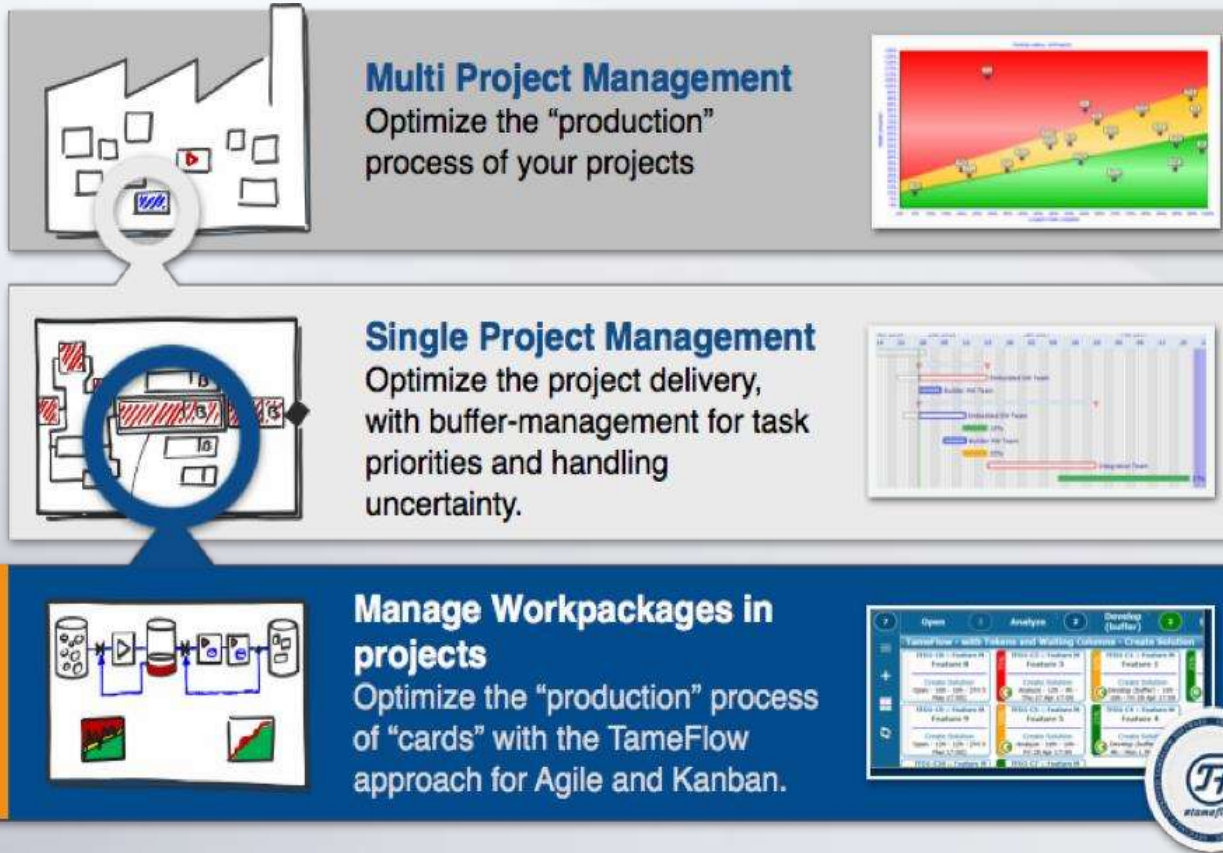
Does your process look like this?



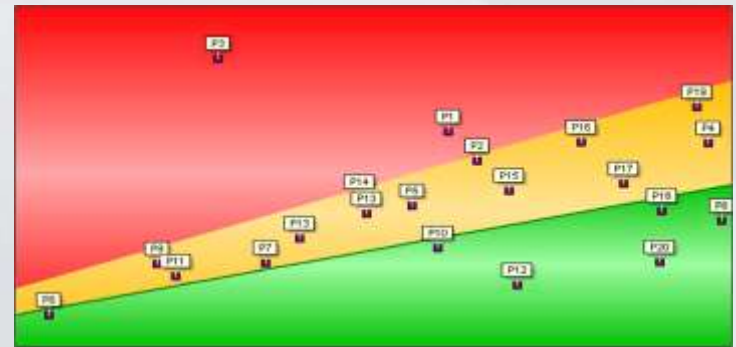
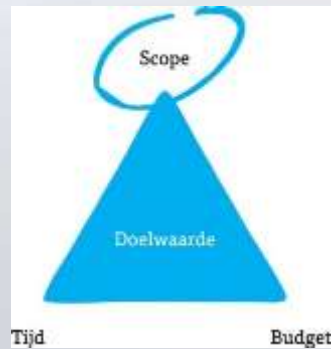
Optimize our process

- All steps required to make a good end product → move them to the **main process** (remove batching: 2nd review/code inspection, integrations)
- **One process** for all developments
- Focus on estimated **delivery date**
- Drastically reduce time spent in **meetings** (for a while)
- Brake down the project in as **small as possible** subprojects and cards

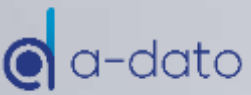
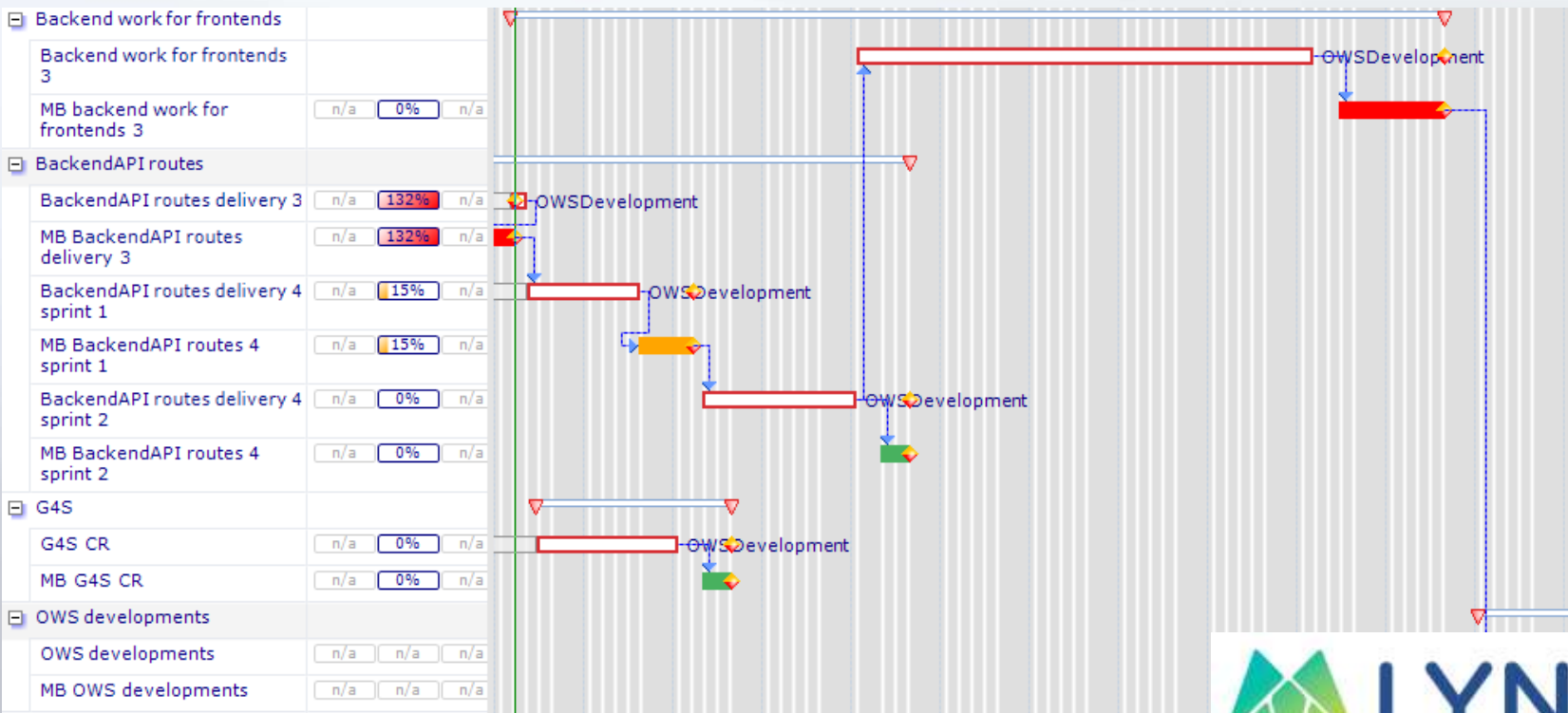
Unity of Priority & WIP limits



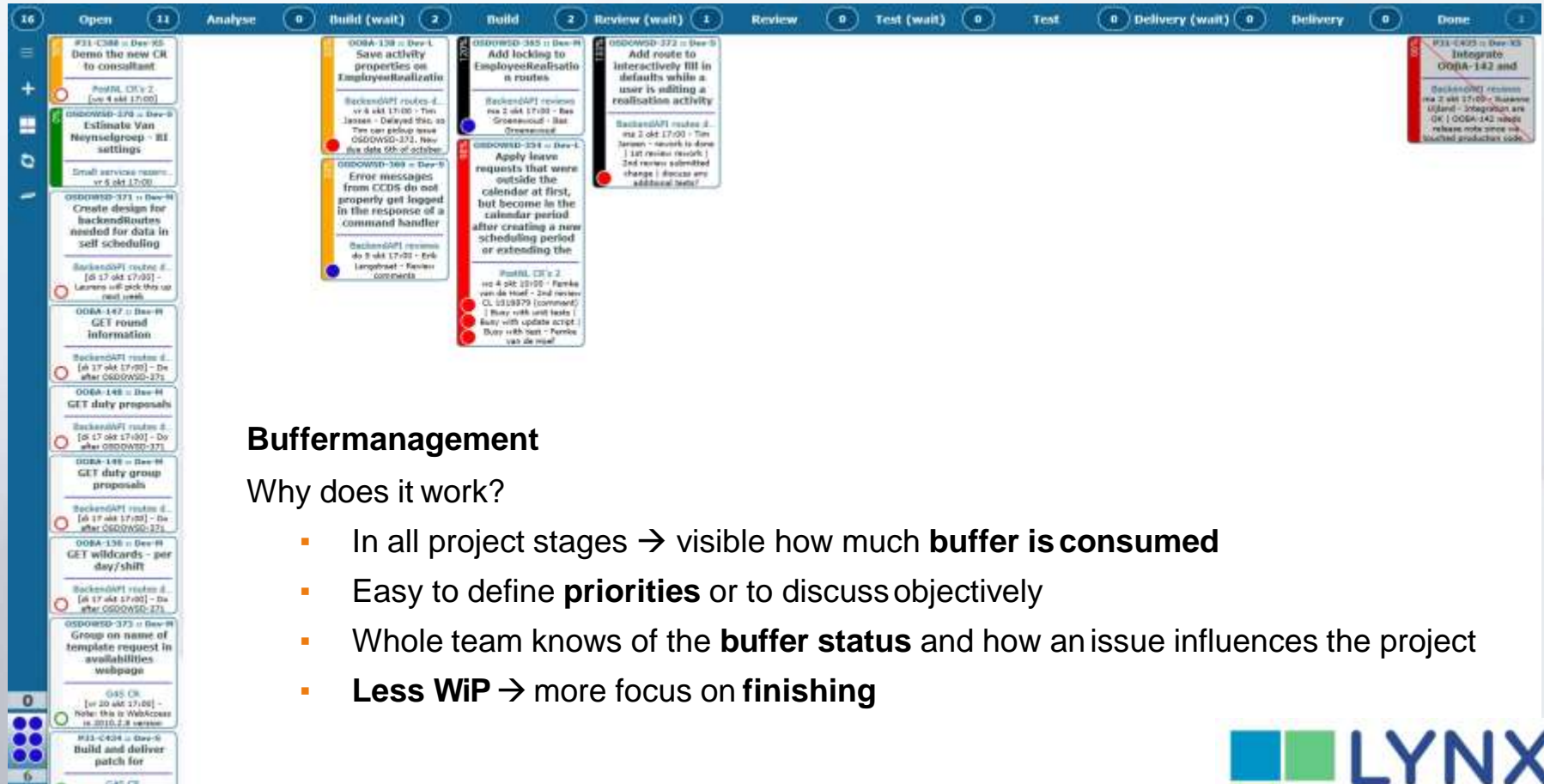
Manage our Portfolio



Manage our Projects



Manage our Workload

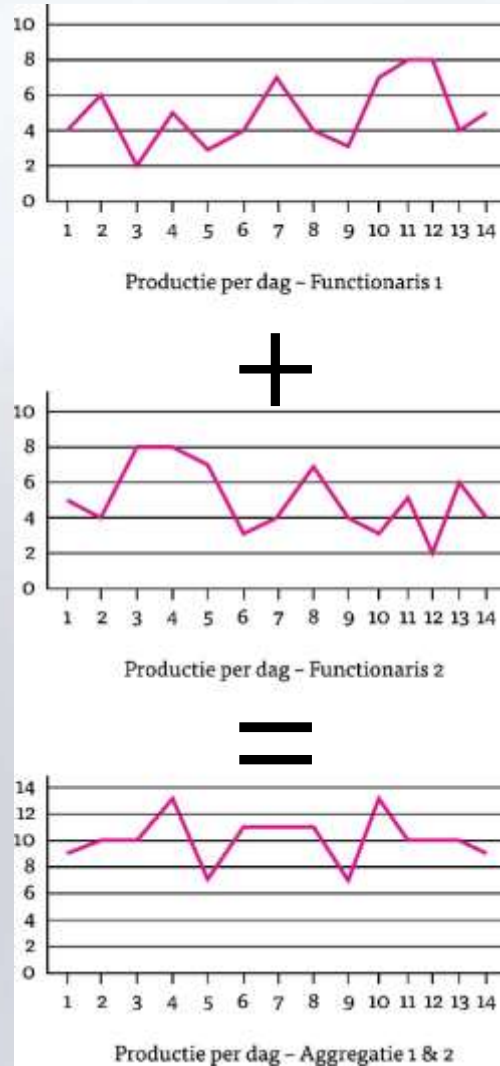


Buffermanagement

Why does it work?

- In all project stages → visible how much **buffer is consumed**
- Easy to define **priorities** or to discuss objectively
- Whole team knows of the **buffer status** and how an issue influences the project
- **Less WiP** → more focus on **finishing**

Assign Tasks to Teams



Teamwork

- Team decides about attention needs instead of team lead
- Team focuses on the Goal i.e. finishing tasks
- Teammembers support each other
- Less highs and lows



Manage the Flow

- **Why:** Measure
- **What:** Identify
- **Where to:** Decide
- **How:** Change

Reports & Structure

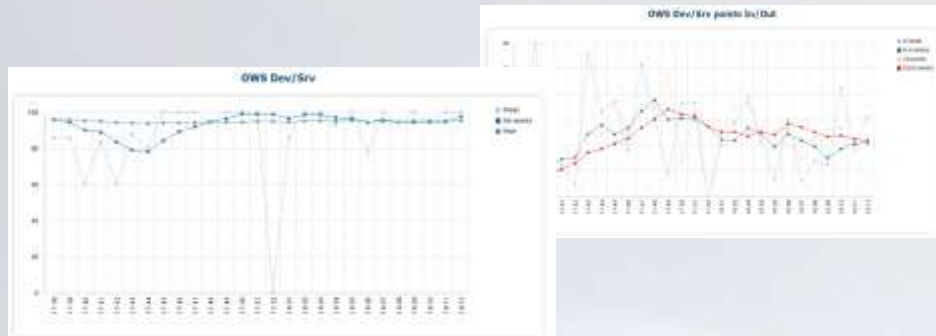
- Daily Standup
 - Cards progress
 - WiP



- Weekly Standup
 - Flow
 - Capacity
 - Throughput

Maintenance Data from 01-01-2017 Duration: 49 w				In: week: 50 points Total: 717.5 points				WIP: 29 points				Closed: Week: 3 points Standard: 19 points				Closed: Total: 681.3 points Standard: 750 points				Reliability card: Week: 100% 4 weeks: 93.8% Total: 96.5%			
Product	In	WIP	Closed				Lead time			Lead time Little (Days)		avg. processing time (Days)		Reliability standard: 95%									
			Week	Hours	Total	Hours	Week	Total	Hours	Week	Total	Week	Total	In time (week)	%	Closed (4 weeks)	In time (4 weeks)	%	In time (Total)	%			
MR-Path	0	35	2	8	1	57	40	8	8	7	0	0.09	8	0%	18	30	19%	38	98%				
MR-25	0	80	8	8	1	80	48	8	8	0	0	0.22	8	0%	13	13	16%	38	96%				
MR-5	3	180	19	0	2	180	98	0	8	31.1	0	1.01	8	0%	27	25	92%	159	98%				
MR-M	2	146	3	1	8	141	200	138	13	4.2	3.27	3.84	8	100%	18	18	80%	186	79%				
MR-L	0	8	1	0	0	8	20	8	8	30	0	3.73	8	0%	8	0	0%	4	100%				

- Monthly Sitdown
 - Analysis
 - Improvement



What were the Results?

Process
Daily work
Reliability
Issues
Employees



What were the Results?

Process

Daily work

Reliability

Issues

Employees

- Efficient ≠ Effective



What were the Results?

Process

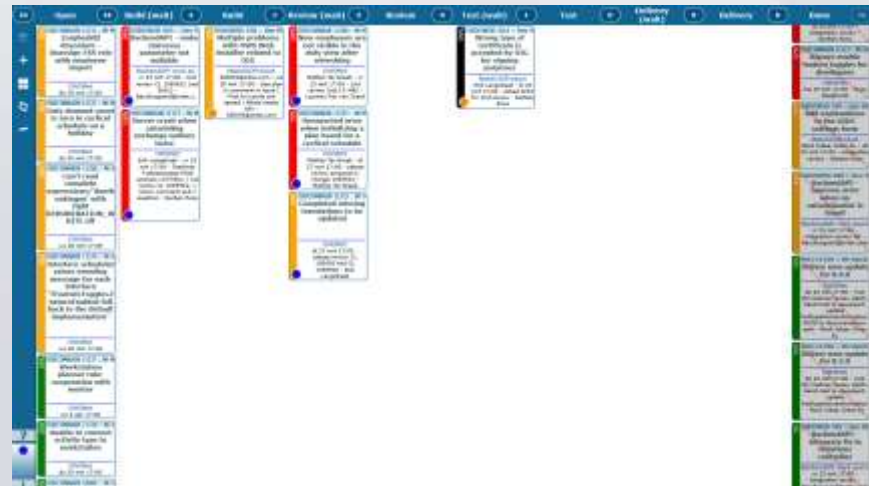
Daily work

Reliability

Issues

Employees

- WIP form 120 days to < 20 days
- Clear overview in what to do AND what not to do



What were the Results?

Process

Daily work

Reliability

Issues

Employees

- From 30% to $\geq 90\%$ performance on delivery on 6 w.a.
- From 15 escalations to ZERO



What were the Results?

Process

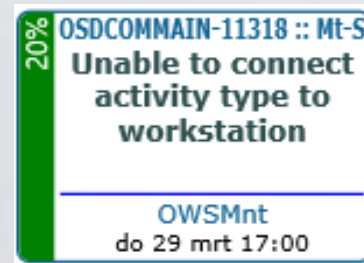
Daily work

Reliability

Issues

Employees

- Lead time from 40 days to 19 days



What were the Results?

Process

Daily work

Reliability

Issues

Employees

- WHY am I making this change?
- FOCUS
- Less work pressure
- PRIDE



Summary Solution Elements

TOC Solution for Services

Define your Operational Goal

Lower your WIP

Optimize your processes

Apply 3-level Buffer Management

Assign work to Teams

Manage = M – I – D – C



THANK YOU!

And Good Luck!