



BELOS PLP
An implementation of a mixture of
MTO, MTA and ETO, as well as
PTA and PTO
Case study

Krzysztof Abramowski
Goldratt UK



Krzysztof Abramowski

- Born in 1958, Poland
- Graduated from the Warsaw University of Technology
- 1992-2000 co-owner of JBA Poland – leading ERP provider in Poland
- Since 2000 co-owner of TOC Consulting Polska a company that:
 - Have introduced TOC to Poland (in close cooperation with Oded Cohen and Martin Powell),
 - Have published “The Goal” and “Critical Chain” in Polish
 - Have run a successful TOC post-graduation studies at Warsaw University of Technology (in cooperation with Oded Cohen)
 - Have implemented TOC solutions in many Polish companies
- Since 2010 has been working in the UK for Levee/Goldratt UK
- TOCICO certified: Supply Chain, Project Management, Thinking Processes



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Presentation Purpose

**Share experience from a successful
implementation**



Levee/Goldratt UK

History

- Established in 1989 by Dr Goldratt and partners
- Since 2004 led by Andy Watt
- Focused on TOC implementations:
 - Product Development / Project Management
 - Holistically
 - Operations
 - Sales
- Contracts are result based
- 10 employees
- >100 blue chip & SME clients
- Annual Turnover €1.5M



Goldratt UK





TOC Consulting Poland

History:

- Established in 2000 (with help of Oded Cohen and Martin Powell)
- Published The Goal and Critical Chain
- Run one of the most successful post graduating programme (with help of Oded Cohen)
- Delivered TOC trainings for hundreds of people
- Helped implement TOC in dozens of firms
- Currently run by Agnieszka Szepielow



TOC Consulting Poland

Amica Wronki

Autoliv Poland

Business Consulting Center

BELMA Accessories Systems

City Interactive

DWORY

Ergis

Ferrpol

Indykpol

Infra-Tel

Jabil

Klose - Pomorska Fabryka Mebli

Mikrotech

PARP

Philips Lighting Poland

Plannja

Precizo

Relpol

Rol-Mar

Sauer-Danfoss

Sitech Sitztechnik

Swedwood Poland

Thomson Multimedia

Trasko Inwest



BELOS PLP

BELOS-PLP is the largest Polish producer of fittings for HV, MV, and LV overhead power lines.

We have been present in the power energy branch for sixty five years.



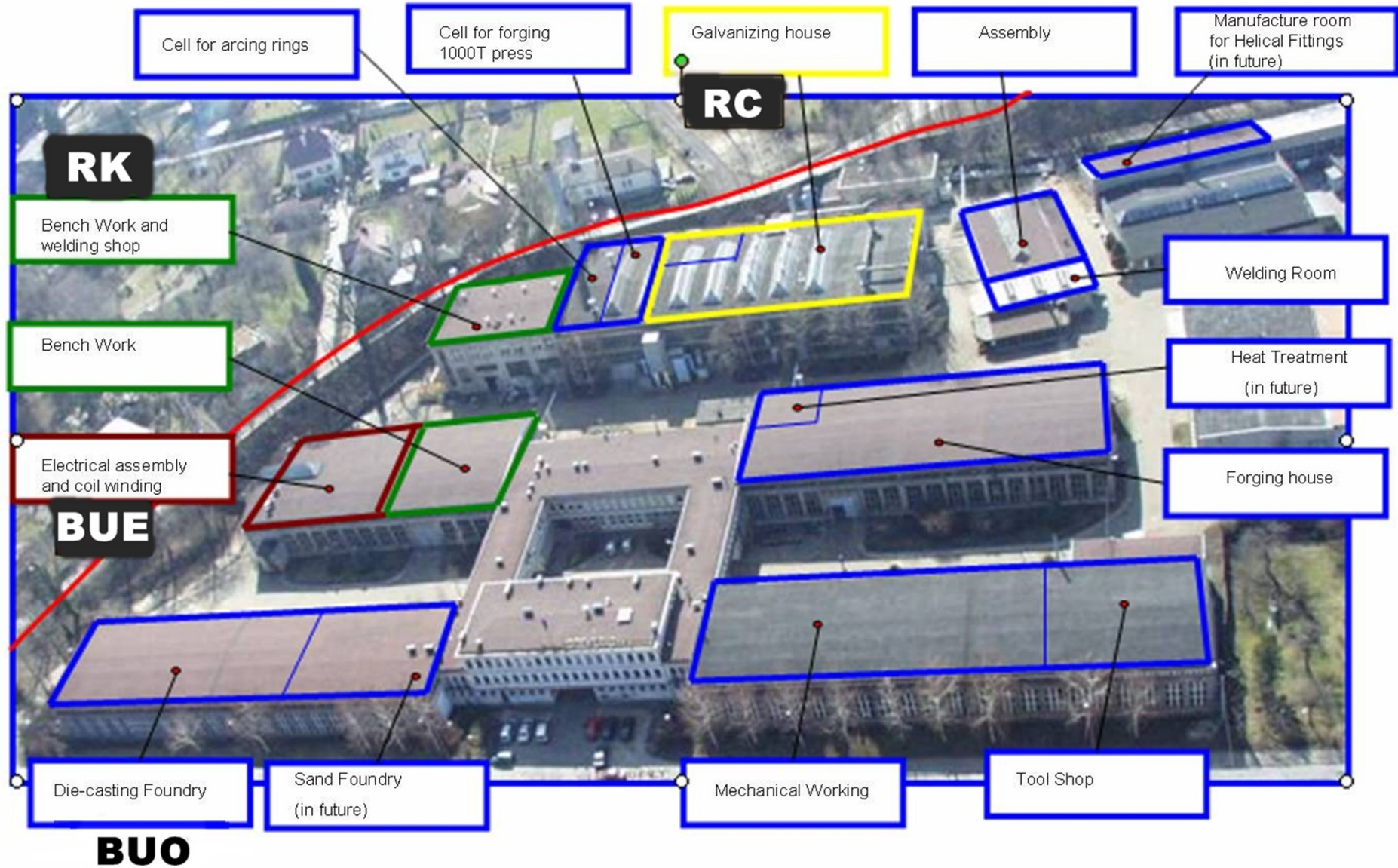
Since 2007 we are a part of global group **Preformed Line Products Company**



BELOS PLP

MANPOWER

| | |
|--------------------|------------|
| Production workers | 171 |
| Office workers | 65 |
| TOTAL | 236 |





BELOS PLP

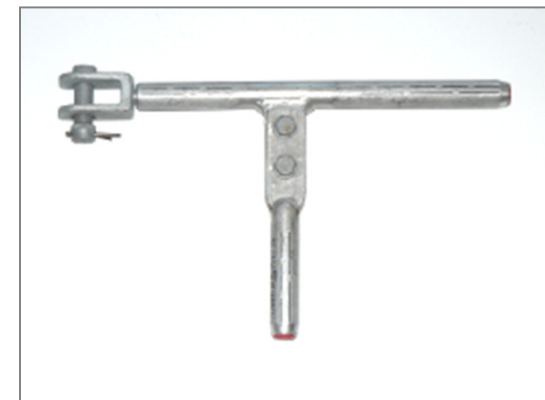
Manufacturing processes

- Forging – induction heating
- Die casting – pour and tilt machines
- Welding
- Machining – CNC turning, milling and bending machines
 - cutting, turning, milling, grinding, bending, drilling
- Heat treatment – steel and aluminum
- Hot dip galvanising
- Tool making
- Assembly



BELOS PLP - fittings for power lines

CLAMPS, JOINTS





BELOS PLP - fittings for power lines

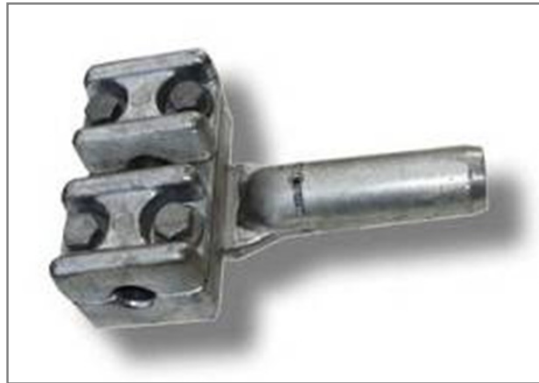
LINKS





BELOS PLP - fittings for power lines

CLAMPS





Contract

- BELOS PLP got in touch with Agnieszka
- Visited by Andy shortly afterwards
- Reference visit to ROSCOMAC (Worthing, West Sussex)
- Contract signed September 2012
- Kick off meeting – late September

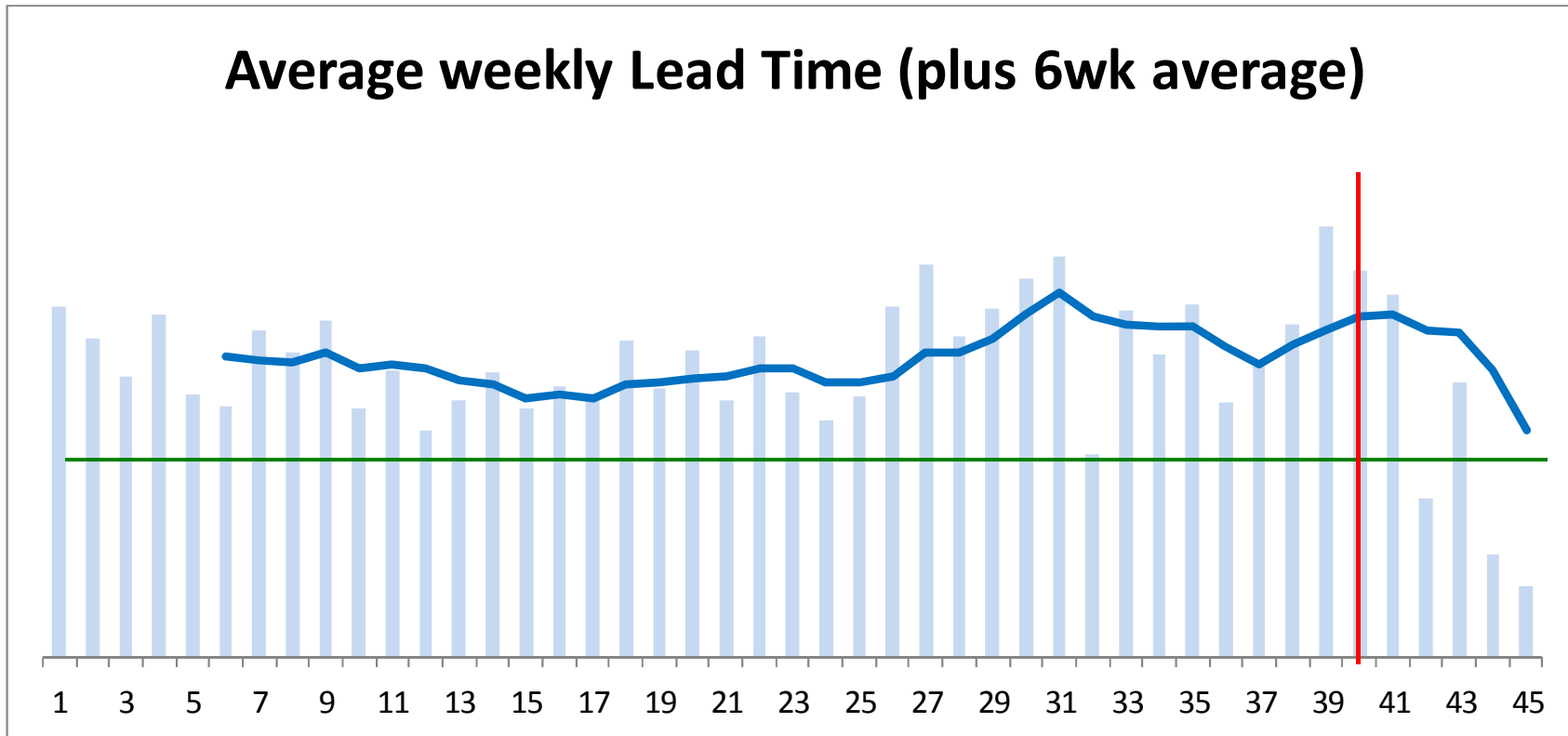


Contract

- Scope – Operations only
 - Manufacturing (MTO, MTA)
 - Purchasing (PTO, PTA)
 - Engineering (ETO)
- Results based bonus structure
 - Two main success measurements
 - OTIF
 - Lead Time
- Go-no-go after 2 months

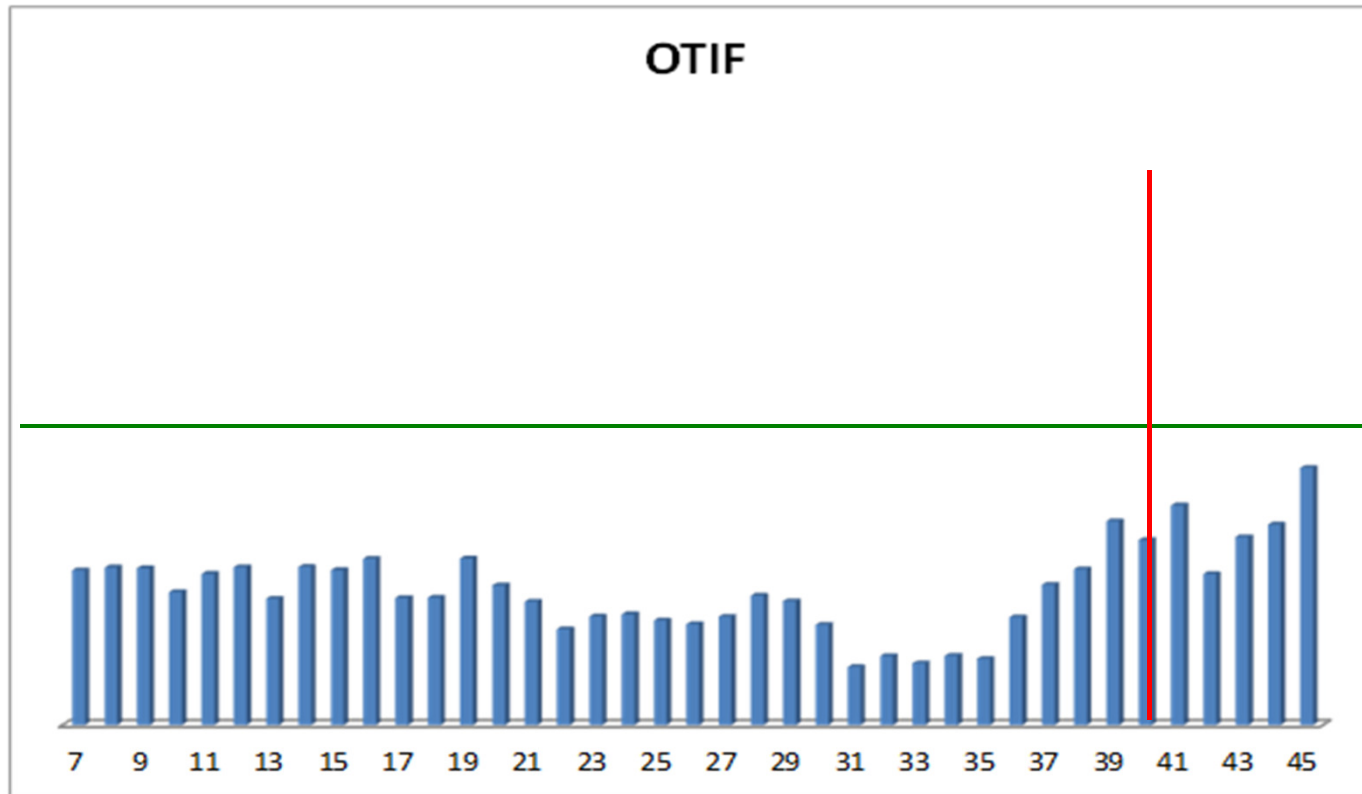


Contractual measurements before start





Contractual measurements before start



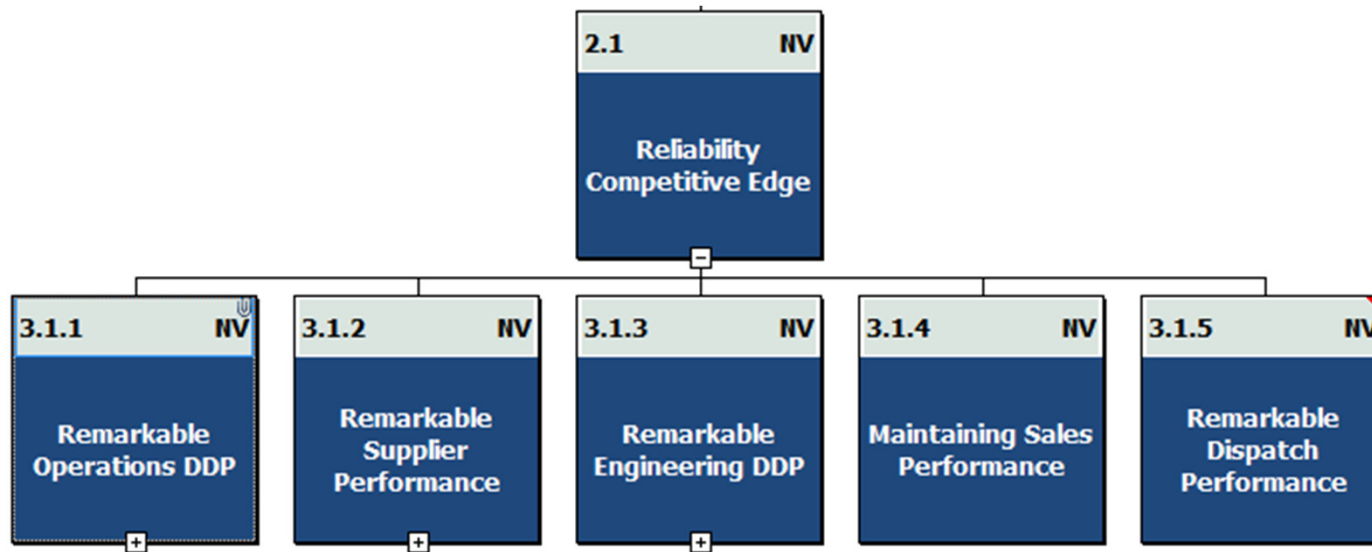


Implementation

- People
 - Goldratt
 - Andy Watt - monthly reviews
 - Krzysztof Abramowski - weekly visits
 - Agnieszka Szepielow – weekly visits
 - Belos
 - The Board – monthly reviews
 - The Core Team – responsible for day-to-day implementation
- Processes
 - S&T based implementation
- Software
 - RopeWeaver

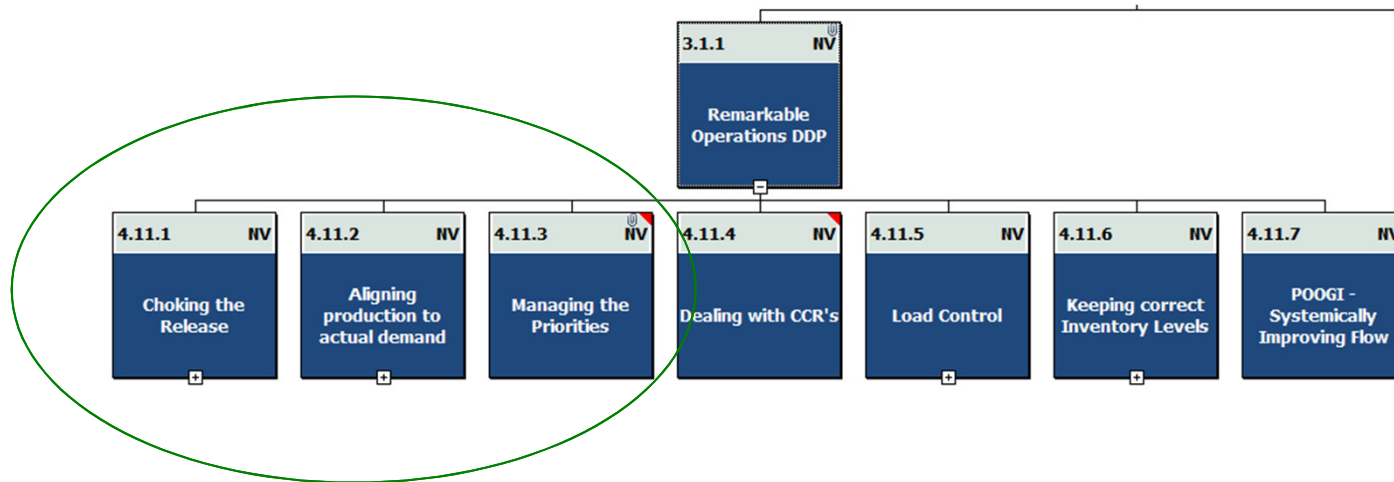


S&T





Phase I – month 1



- Choke the release – freeze wip completed in week 1
- Release schedule & Managing priorities completed in week 3 (RopeWeaver)



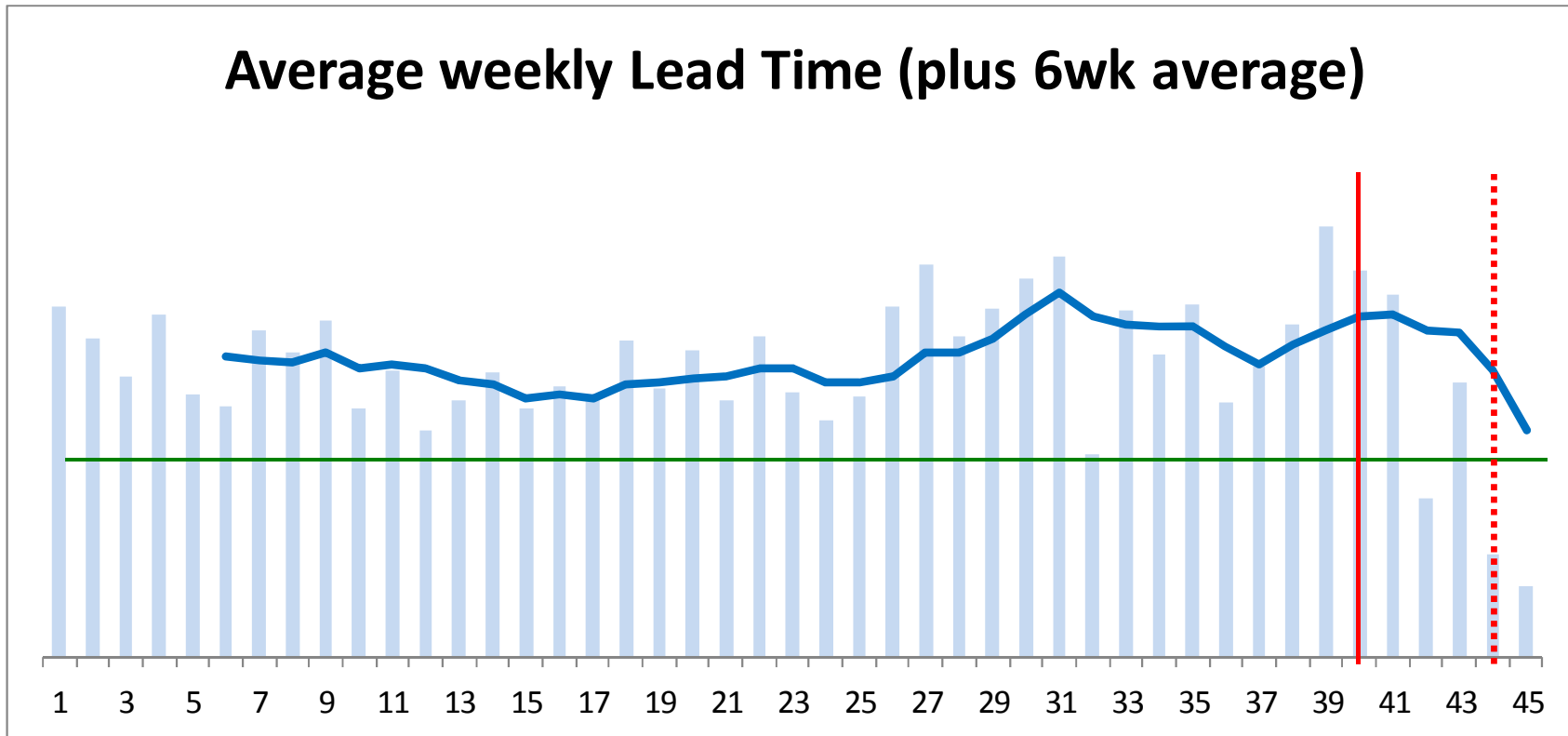
Phase I – month 1

Challenges:

- What is current lead time for products groups (freeze wip)
 - Why it is a challenge? – searching for appropriate data can **cause a delay**
- Customers ability to provide proper interface files for TOC software (release schedule & priority system)
 - Why it is a challenge? – searching for appropriate data can **cause a delay**

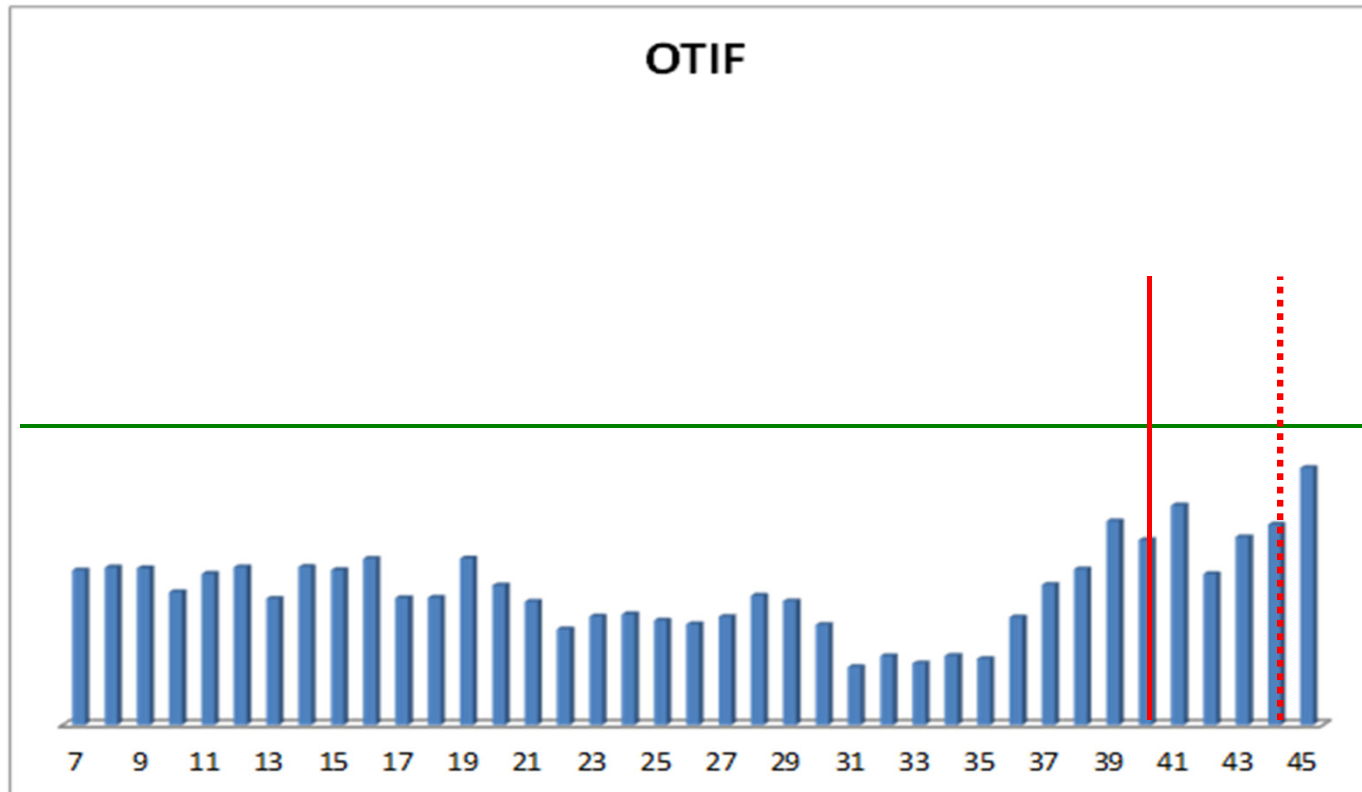


Phase I – month 1 results





Phase I – month 1 results





Phase I – month 1 – wip before and after





Phase I – stillage's “graveyard”



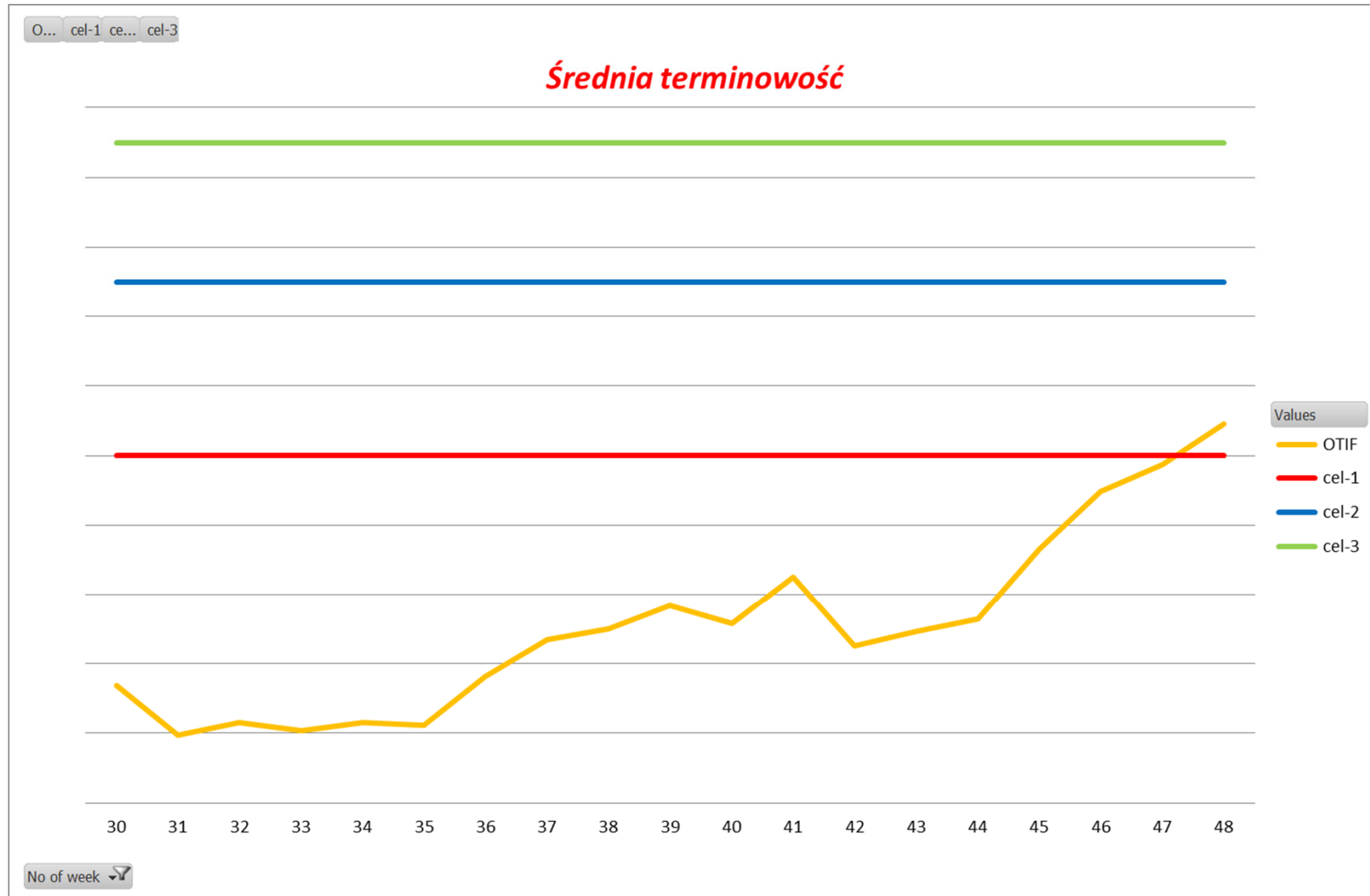


Phase I – what was implemented

- MTO & MTA
 - Release Schedule
 - Buffer reporting
 - Priorities at shop floor
 - Daily buffer meetings
- PTA
- RopeWeaver used by key users
- Trainings for core team
- Internal trainer prepared



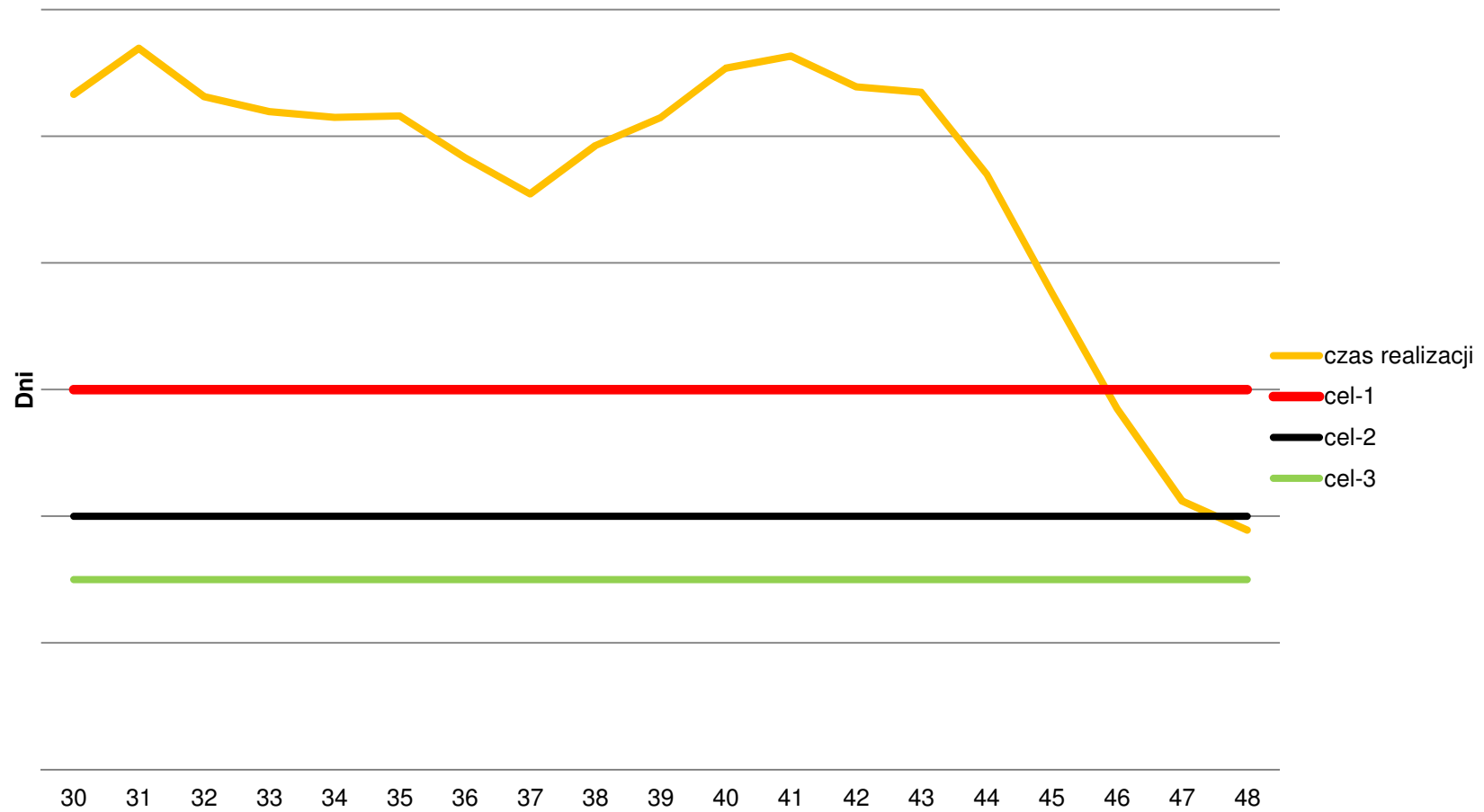
Phase I – results - OTIF





Phase I – results - LT

Średni czas realizacji zleceń produkcyjnych





Phase I - summary

- Success factors
 - Good S&T
 - Solution fully supported by the Board
 - Core team fully subordinated to implementation process
 - Bonuses synchronized with contractual
 - Procrastination avoided
 - No decision delays
 - No lengthy data crunching – keep things simple
 - No IT delays – flexible interfacing between RopeWeaver and ERP



Phase II – Implementation plan

- Create procedures and audit process for a part of solution implemented in Phase I
- Implement new solution elements:
 - Full kit in production (raw materials, tools, routings)
 - Maintaining CCRs
 - Load control
 - Due date quoting
- Deliver appropriate trainings
 - PTO,PTA
 - S&T
 - Planned Load
 - Maintaining CCRs



Phase II – Changing paradigms

- Create procedures and audit process for a part of solution implemented in Phase I – that helps changing paradigms
 - Complicated is better than simple
 - Staying idle is a waste
 - People perceive reality the same way as myself
 - Time is money
 - Problems are caused by people
- New paradigms
 - Reality is simple and governed by constraints
 - People are good
 - Staying idle can be beneficial

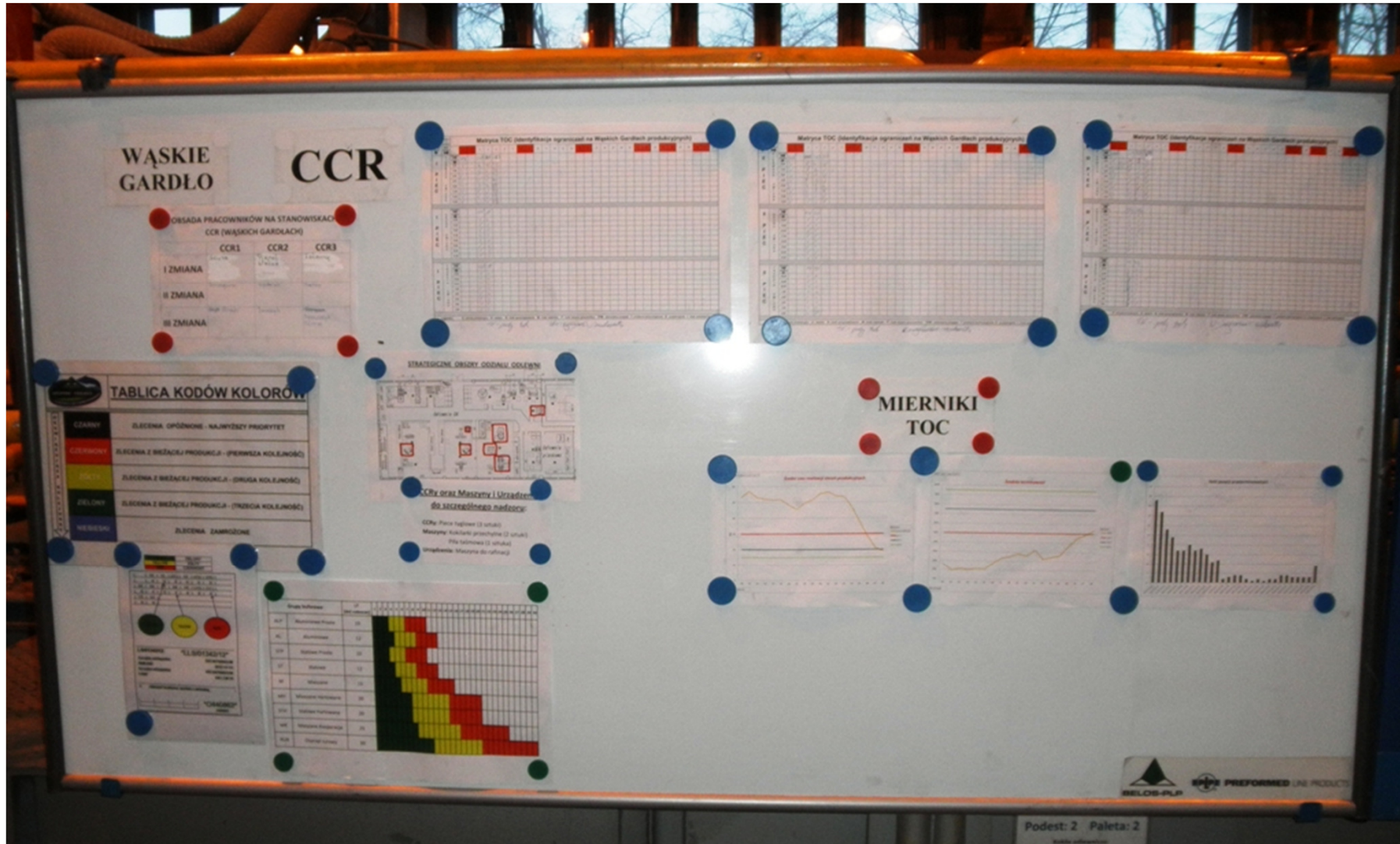


Phase II – Changing paradigms

- Approach to the change different from that taken in Phase I
 - Phase I – PUSH
 - That must be supported by top management
 - Top management and consultants team should provide the same message
 - Procrastination is our main enemy
 - Phase II – Build upon results achieved in Phase I
 - Protect the results – procedures and audits
 - Visualise the results
 - Make them relevant to people



Phase II – Visualize results



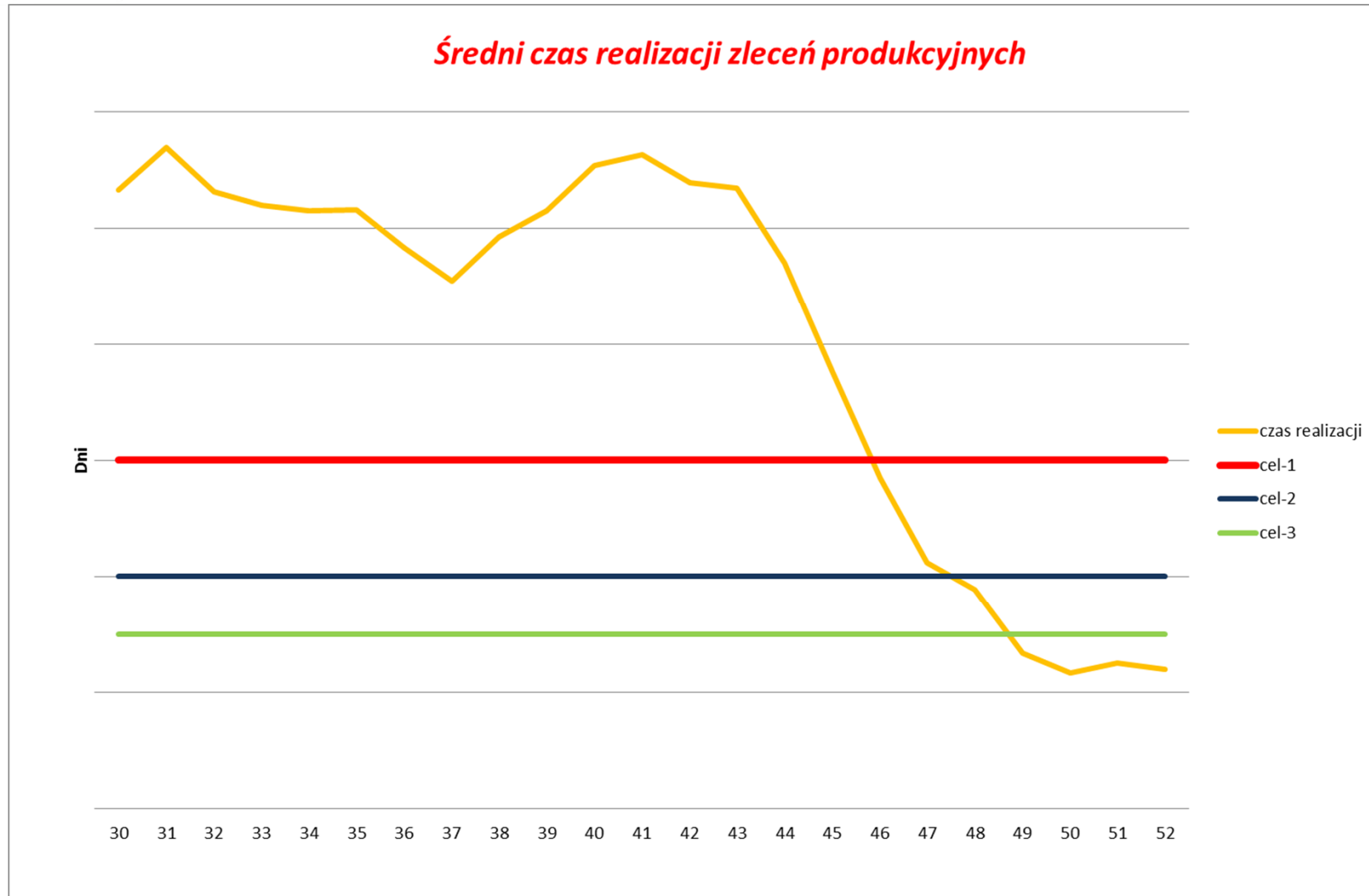


Phase II – Current challenges

- Load control
 - Requires work centres to be re-arranged
 - Rough Capacity checks run periodically before Load Control is fully implemented
- Keeping the momentum
 - POOGI



Phase II – end of year results - LT





Phase II – end of year results - OTIF

