Designing and Implementing a TOC-based Reward and Incentive System (TRIS)

Christoph Lenhartz

Logo IT-Consulting

Moers, Germany

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A Word of Caution and a Promise…

- You don't necessarily have to copy everything…
  - **From April 22nd on, this presentation will be available for download on the internet:**

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    or send e-mail to: toc@lenhartz.de

In the Next Hour We Will…

- Explore the importance and some of the effects of reward and incentive systems (RIS) and measurement systems for the global performance of an organization
- Understand how and why many traditional RIS fail to support the improvement of organizational performance
- Learn how a TOC-based RIS (TRIS) can help focusing efforts on the Goal
- Share experiences from two TRIS-implementation projects

What are we going to talk about?

What to change?

- **What is a reward and incentive system (RIS)?**
- **Why do traditional RIS fail?**
  - **CRT and Root Causes**

What to change to?

- Developing a TRIS
  - Clouds, injections, and a FRT

How to cause the change?

- Introducing TRIS
  - Implementation approach
  - Results and experiences from two cases
  - Outlook

What is a Reward and Incentive System (RIS)?

- RIS are composed of
  - **all the elements involved in the**
  - **allocation of compensation and benefits to employees and managers**
  - **in exchange for their contributions to the organization's fulfillment of its goal**
- The goal of a RIS is to support the organization reaching its goal
- RIS have two components
  - **Rewards & incentives**
  - **Performance measurement & performance appraisal**

Traditional RIS Philosophy Centers around Three Issues

- The reward structure must be equitable and consistent to ensure interpersonal fairness and equality of rewards:
  - **equal treatment of everybody**
  - **compliance with legal requirements**
- Individual contributions to the organization need to be acknowledged by providing fair rewards
- Competitiveness in the labor market to retain and attract competent employees

Measurements Drive Behavior

- Organizational behavior research proves that RIS cannot be studied apart from their effects on individuals
- The organization needs to decide what types of behavior or performance it wants to encourage with the RIS and design the RIS accordingly
- “Tell me how you will measure me and I will tell you how I will perform. If you measure me in an illogical way… Do not complain about illogical behavior.” (E. Goldratt)
- In other words: You always get what you measure

Some UDEs Found with Traditional RIS

- RIS often don't help an organization moving closer to its goal of making more money now and in the future
- They also violate the necessary conditions of satisfying the needs of employees: good people quit, others are laid off in cost cutting initiatives
- Many managers often focus on maximizing quarterly results
- Budgets are reduced from period to period

A Generic Current Reality Tree of Traditional RIS

- The CRT answers the question: “why do many traditional reward and incentive systems fail to motivate employees and managers effectively?”
- The analysis refers to many traditional RIS
- Entities existing within a specific organization (yours?) may not be present here, and the CRT might as well contain entities that do not apply to some organizations
- However it is based on experiences, observations, research, and scrutiny by the author and experts in the field.

A Generic Current Reality Tree of Traditional RIS

- The CRT is on a separate page

Major Root Causes for the Failure of Traditional RIS

Traditional RIS fail to motivate employees and managers effectively because they:

- lack internal and external transparency (they are not easily understandable and comparable)
- often focus on local optimization
- reflect cost-world-thinking
- often have a short-term instead of a long-term perspective

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Developing a TOC-based RIS, a TRIS

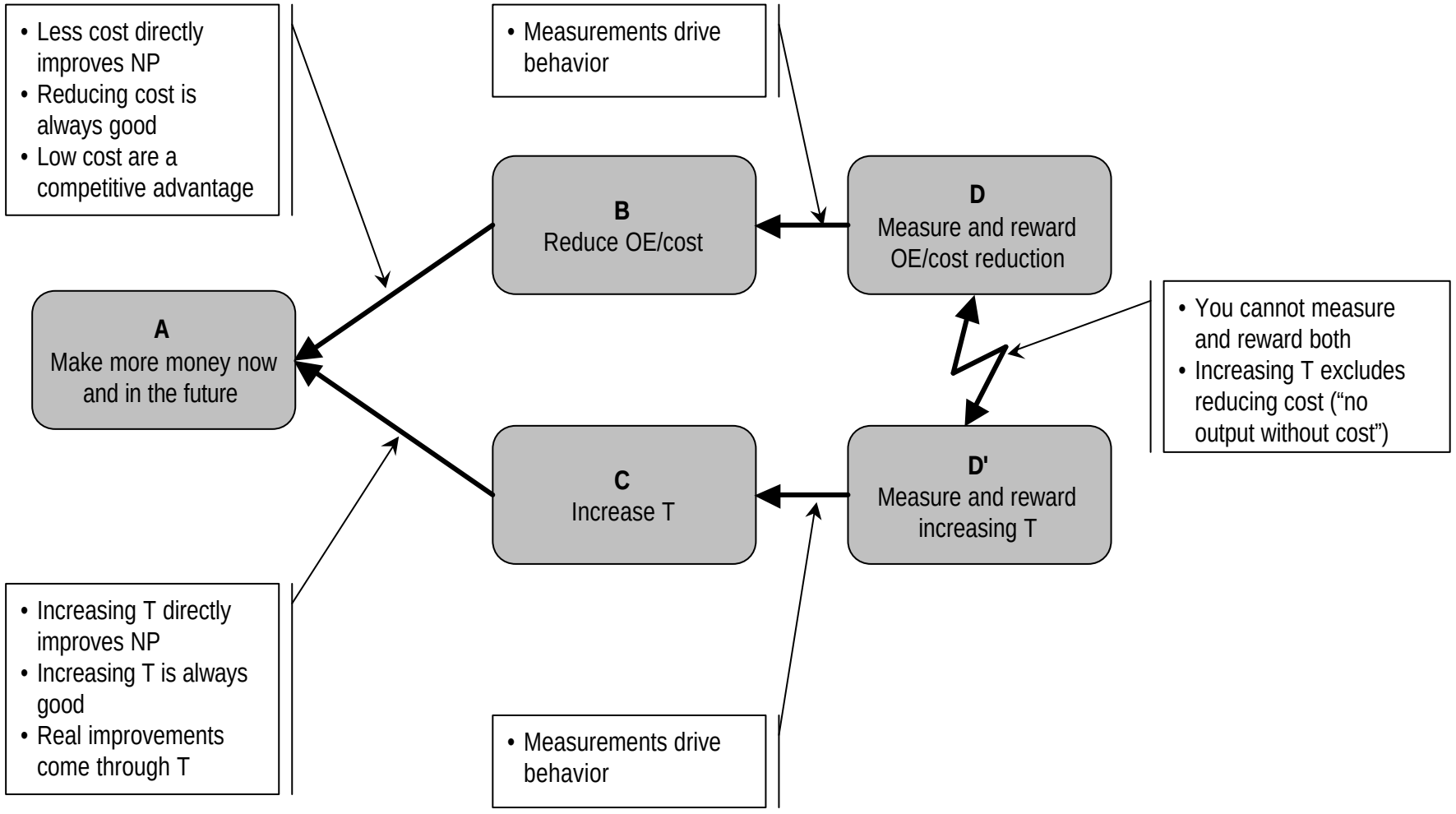
This section uses Evaporating Clouds to

- further analyze the failure of traditional RIS
- develop injections for the development of a TRIS

T – I – OE Revisited

- **T**hroughput – the rate at which the system generates money through sales: T = Sales – Totally Variable Cost
- **I**nventory – those items purchased for resale incl. finished goods, work in process, and raw materials or that could be turned into sales, e.g., assets like real estate, machinery etc.
- **O**perating **E**xpense – the money spent to turn inventory into sales
- **N**et **P**rofit – the systems net result: NP = T – OE (note that inventory does not influence NP, but OE might have been incurred for WIP and FG!)

EC1: Cost Reduction vs. Increasing Throughput Dilemma



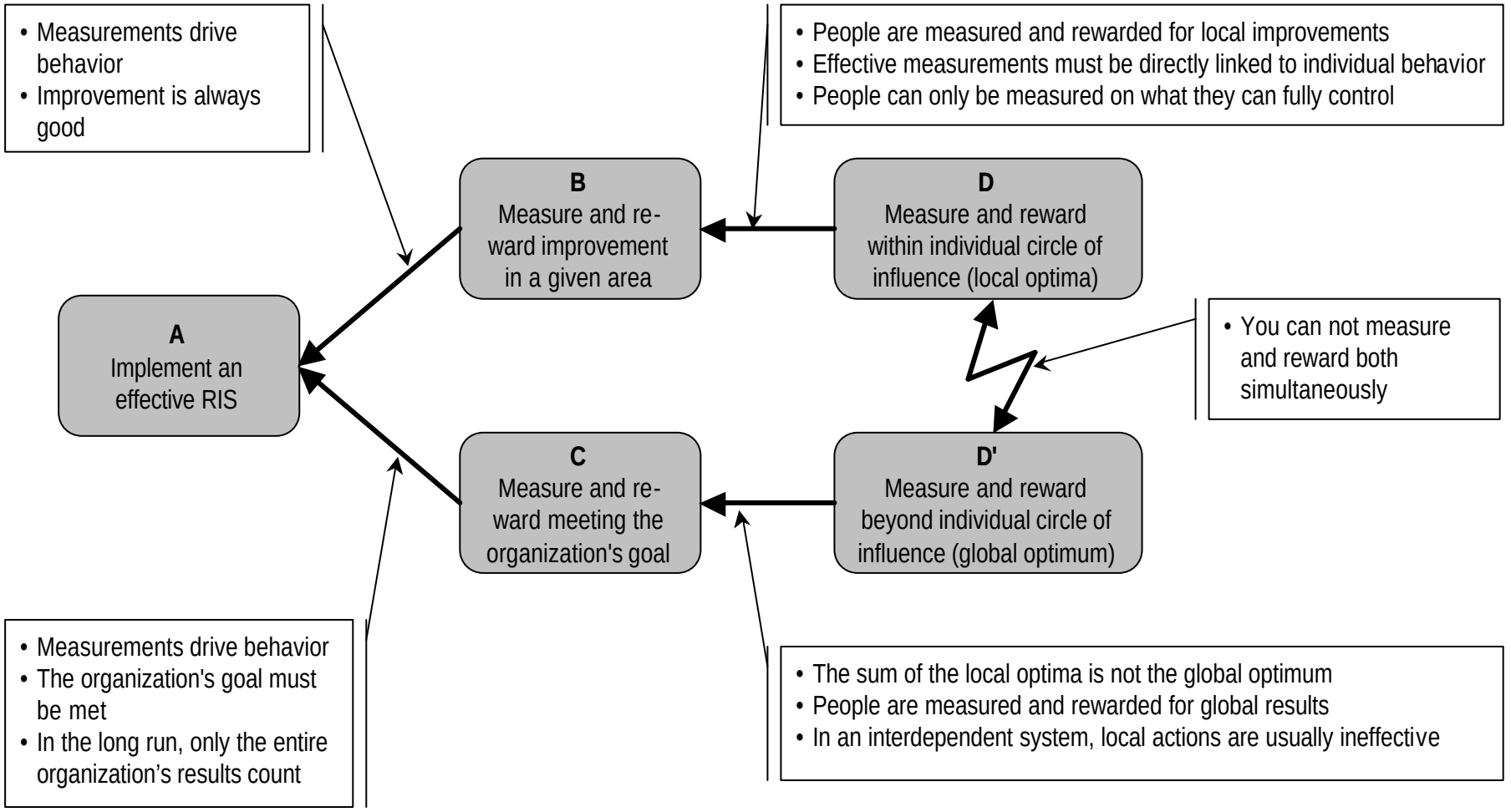
Injection 1: Cost Control

- Cloud's objective: long-term max (NP = T – OE)
- Due to higher potential for improving NP, primary focus should be on T

Cost control = Prioritize T while keeping OE under control

- Costs are incurred by processes rather than products:
  ➔ focus budgeting on process of creating output
  ➔ clearly identify, separate, and allocate OE and TVC
- Fix OE at the budgeted level
- Do not encourage/measure/reward further reductions
- Additional OE due to activities that increase throughput is only approved if ?T > ?OE; OE is then fixed at the new level

EC 2: Measurements Dilemma



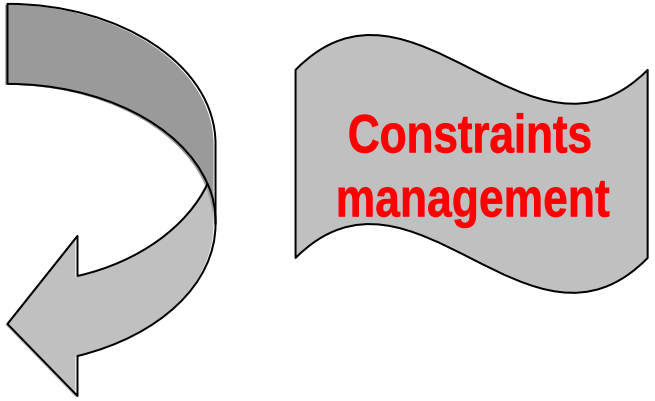
Injection 2: Transparent Measurements

- Easy to understand (transparent) measurements and rewards link and align global and local/departmental optimization

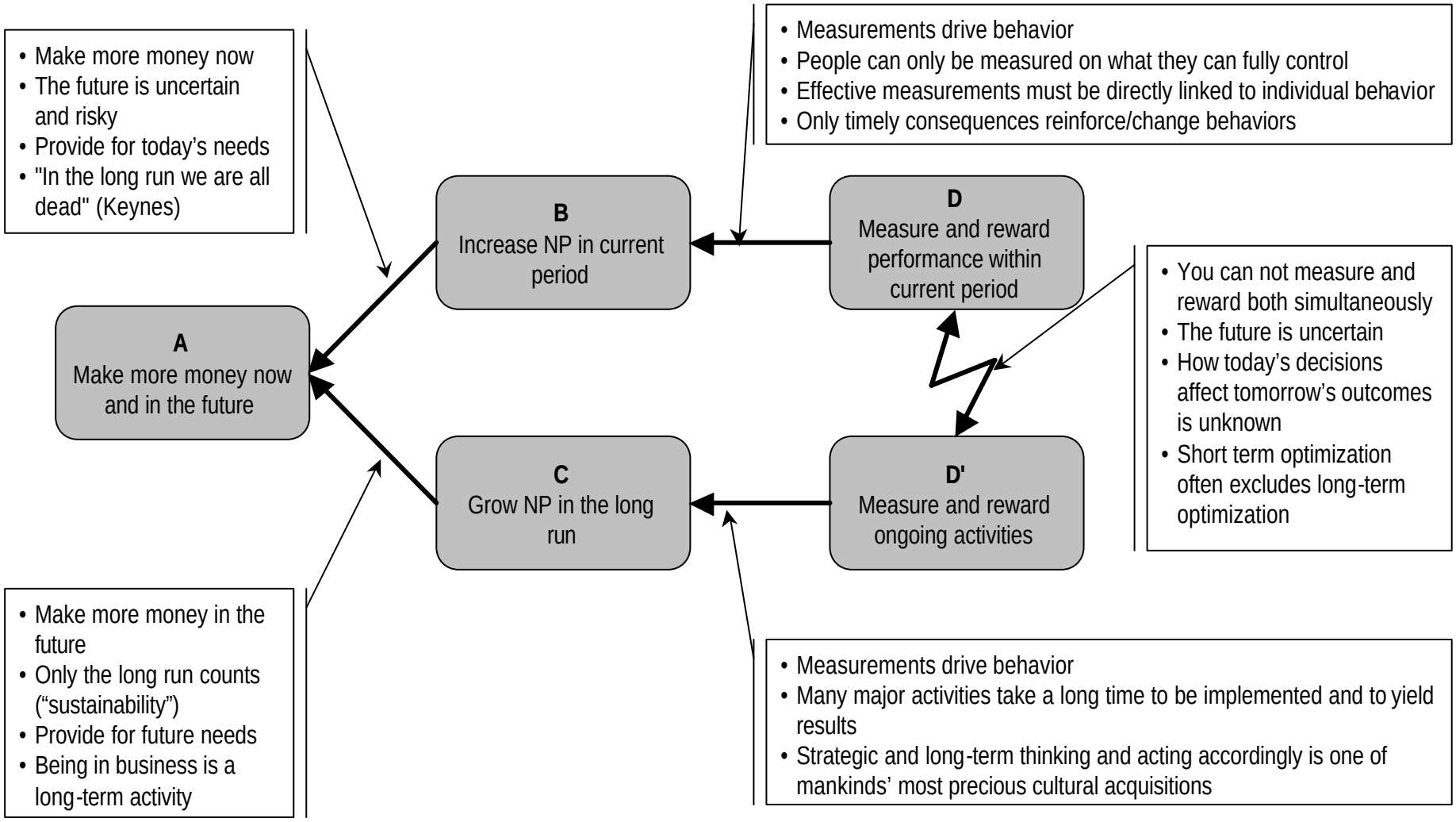
Base measurements and rewards on managing the organization's constraints

- Locally:
  - **Exploit the constraint**
  - **Subordinate the non-constraints**
- Globally:
  - **Determine growth in NP:**

    $?NP = ?T - ?OE = (T_t - T_{t-1}) - (OE_f - OE_{t-1})$



EC 3: Profit Today and in the Future Dilemma



Injection 3: Reward increase in NP over time

- To some extent, the future will always be uncertain!
- Therefore some of the uncertainty needs to become part of the TRIS
- If possible, offer some of the reward as stock or shares, etc.
- Owner-employees are more involved and motivated to grow “their” company's profits

A) Make some of today’s rewards dependable on meeting some future ? NP or NP thresholds (use trends)

B) Invest some of today’s NP in the company and share some of future’s NP with those that created today’s results (options on future NP)

C) Put some of today’s NP in reserves and pay after a pre-defined period (plus interest)

Injections are Used to Develop a Generic FRT

- Mandatory TOC education for everybody (the company as a system, its goal, necessary conditions, interrelationships, constraints, 5 FS, POOGI, etc.)
- Explicitly base rewards on successful management of the company's constraints (i.e., exploitation, subordination, and elevation), use TVA accounting and trends
- Management provides regular information about constraints
- Encourage increasing throughput while controlling operating expense

The TRIS FRT

- The FRT is on a separate page

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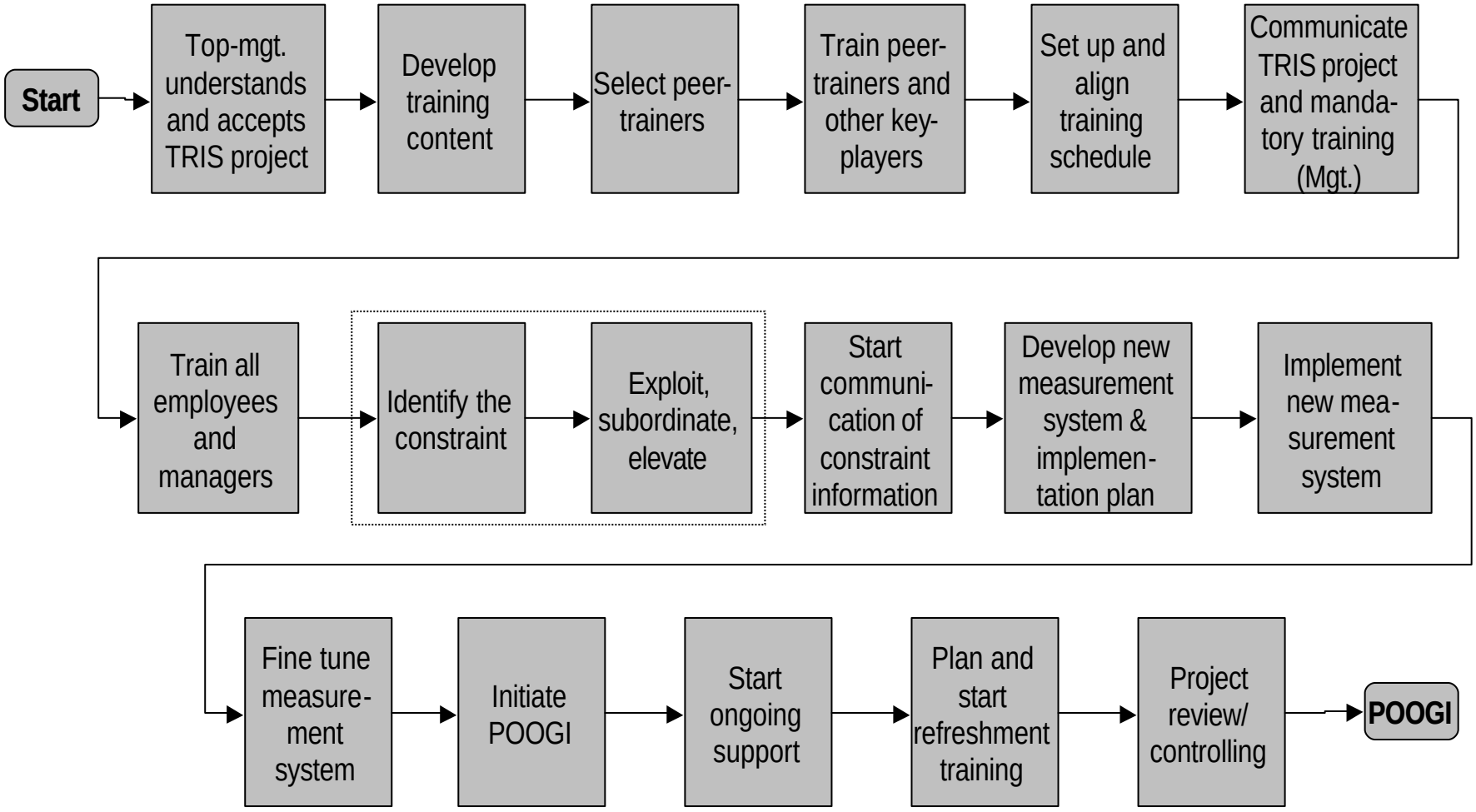
- **Introducing TRIS**
  - **Implementation approach**
  - **Results and experiences from two cases**
  - **Outlook**

PRT

- Separate page

Implementation Approach Results in a POOGI



TRIS in Action: Experiences from Two Projects

- Verenas Coiffeur
  - **Owner-operated hairdressing company**
  - **10 employees, 1 owner**
- IPS
  - **Engineering and electronic parts manufacturer around EIB-technology**
  - **Supplier to major electronic companies**
  - **12 employees, two owners**
- Owners wanted:
  - **to share some of their profits with the employees**
  - **employees to take more ownership of performance**
  - **to empower employees to make significant and meaningful improvements**

Case 1: Verenas Coiffeur (1/5) – Situation

- RIS: small base pay + high percentage of individual sales (40/60)
- But: employees have to supply own materials
- Individual scheduling of appointments by employee
- Employees seek to work primarily during peak hours (individual “return on work hours“ is locally maximized)
- Seat capacity exceeded during peak while idle off-peak
- Employee capacity exceeded during peak while some are idle off-peak
- Scheduling doesn’t reflect seat capacity and demand

Case 1: Verenas Coiffeur (2/5) – Implementation Details

- Constraint:
  - **Moving to number of employees (and seats) (can be controlled ➔ exploitation)**
  - **After initial tuning-phase, idle time remained quite stable**
- TRIS:
  - **Higher base pay than previously (direct materials provided)**
  - **NP-based rewards**
- Mode of operation:
  - **Extended hours**
  - **Flexible work hours depending on scheduled appointments and statistical variation patterns of demand**
  - **Off-peak-discounts for clients**
  - **2nd site opened (constraint's capacity increased)**

Case 1: Verenas Coiffeur (3/5) – Implementation Results

RESULTS FOR 1ST YEAR COMPARED TO PREVIOUS YEAR

- Sales increased by 29% (incl. new site)
- NP increased by 32% (previously 2%)
- No notices (previously 3)
- Attraction of 4 well-qualified employees (previously 3, replacement only)
- 3 openings for trainees filled, all started and continued program
- Absenteeism reduced to 5.45%, below national average (previously 9.95%)
- NP is divided into:
  - **Rewards paid (incl. owner's prime)**
  - **Rewards reserved (incl. owner's prime)**
  - **Investment reserves (until total reserves reach a ceiling)**
- Internal transparency of NP is well-accepted and does not create tension
- Customers appreciate extended hours and off-peak-policies

Case 1: Verenas Coiffeur (4/5) – TVA Table and Constraints Report

TVA table				
		Current	*Previous*	*Delta*
Sales		***56.894 €***	***55.378 €***	***1.515 €***
TVC				
Direct supplies	2.367 €			
COGS	1.891 €			
Total		***4.258 €***	***4.099 €***	***160 €***
Throughput		***52.635 €***	***51.280 €***	***1.356 €***
OE				
Wages	19.700 €			
Rent	850 €			
Utilities etc.	1.755 €			
Other	6.594 €			
Approved increases	- €			
Total		***28.898 €***	***28.820 €***	***78 €***
Budgeted OE		***29.000 €***	***29.000 €***	***- €***
NP		***23.635 €***	***22.280 €***	***1.356 €***
Rewards paid:		***7.091 €***	***6.684 €***	
Rewards reserved:		***11.818 €***	***11.140 €***	
Investment reserve:		***2.364 €***	***2.228 €***	

Constraint Exploitation Report				
		Current	*Previous*	*Delta*
Total FTE work hours in month:		154	140	14
Number of employees:		12	12	0
FTE:		7,6	7,6	0
Total potential work hours:		*1170,4*	*1064*	*106,4*
Regular absences (hours)	Vacation:	121	91	30
	Training:	4	10	-6
	Other:	0	4	-4
Total regular absences (hours):		*125*	*105*	20
Total available work hours:		***1045,4***	***959***	***86,4***
Irregular absences (hours)	Sick leave:	62	54	8
	Other:	0	0	0
Total irregular absences (hours):		*62*	*54*	*8*
Idle time:		*93*	*87*	*6*
Constraint capacity used:		***890,4***	***818***	***72,4***
Ito available capacity:		***85%***	***85%***	***-0,12***
Ito potential capacity:		***76%***	***77%***	***-0,80***

Throughput per available constraint hour:	***50 €***	***53 €***	***- 3 €***
Throughput per constraint hour used:	***59 €***	***63 €***	***- 4 €***

WHILE STRUCTURE IS AUTHENTIC; NUMBERS HAVE BEEN CHANGED UPON CLIENT REQUEST!

Case 1: Verenas Coiffeur (5/5) – Reward Structure

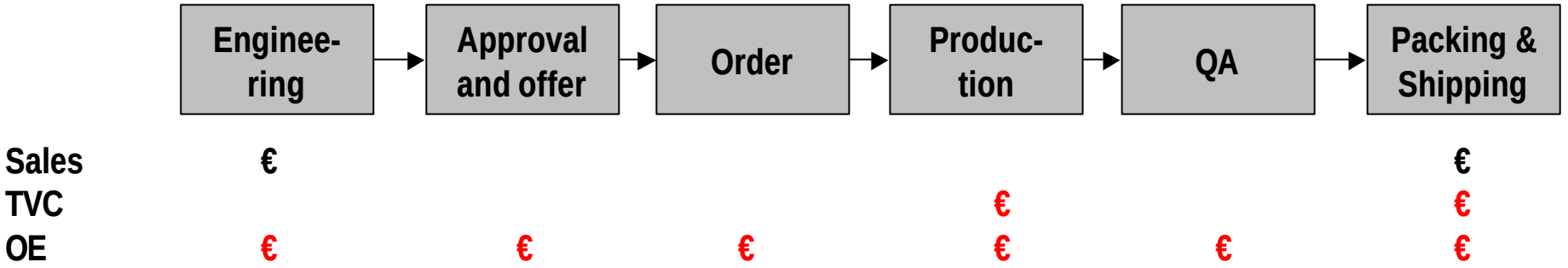
- Payment of rewards reserved:
  - **40% if combined ?NP ≥ 0 and NP always > 0 for 6 consecutive months**
  - **40% if combined ?NP ≥ 0 and NP always > 0 for 12 consecutive months**
  - **20% if combined ?NP ≥ 0 and NP always > 0 for 2 years (plus interest)**
  - **Unpaid amounts are reserved to cover losses (NP<0)**

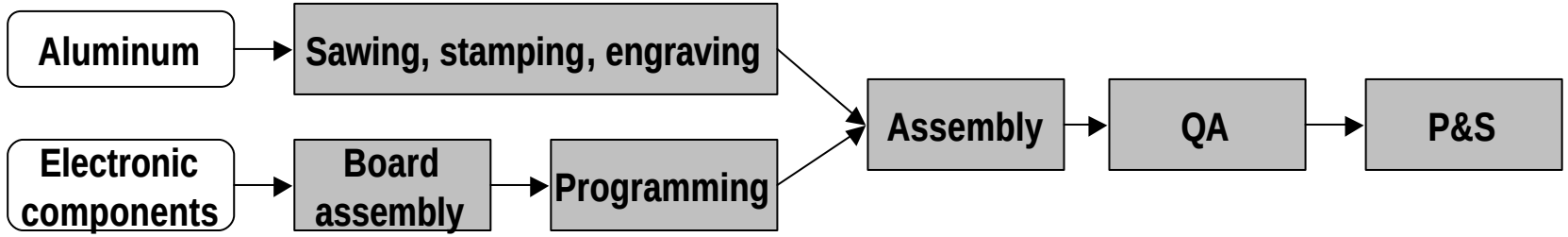
- Rewards are evenly shared between employees on FTE-basis (=constraint capacity), all other differences are reflected in base payment
- Trainees receive rewards in addition to market-level base payment, which allows to attract highly motivated students, while area-wide total demand for trainees significantly exceeds supply
- Amounts for rewards paid and reserved are “normal” personnel cost and need to cover all charges!

Case 2: IPS (1/7) – Situation

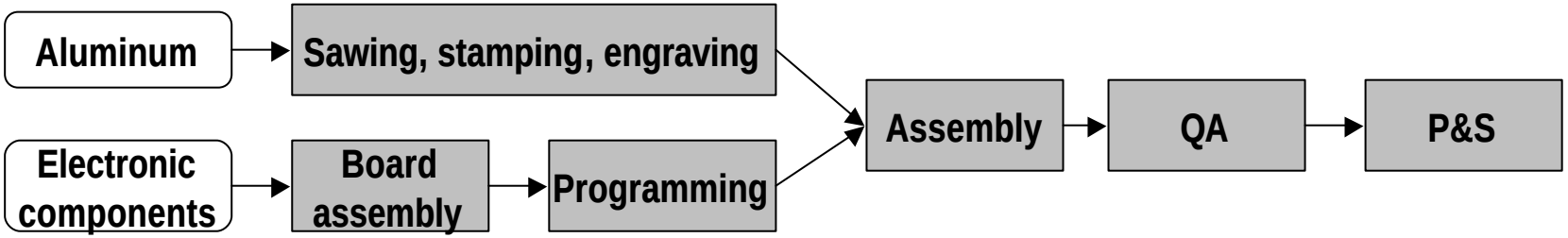
- Products:
  - **Standard EIB (power-line multiplexing) products**
  - **Custom made EIB products**
  - **Engineering and integration**
- RIS: fixed salaries without any additional rewards/incentives
- Constraint: aluminum frame sawing/stamping and engraving machine
  - **Scheduling in large batch sizes, irregular order schedules**
  - **Not all employees know how to operate machine**
  - **Large amount of obsolete parts**

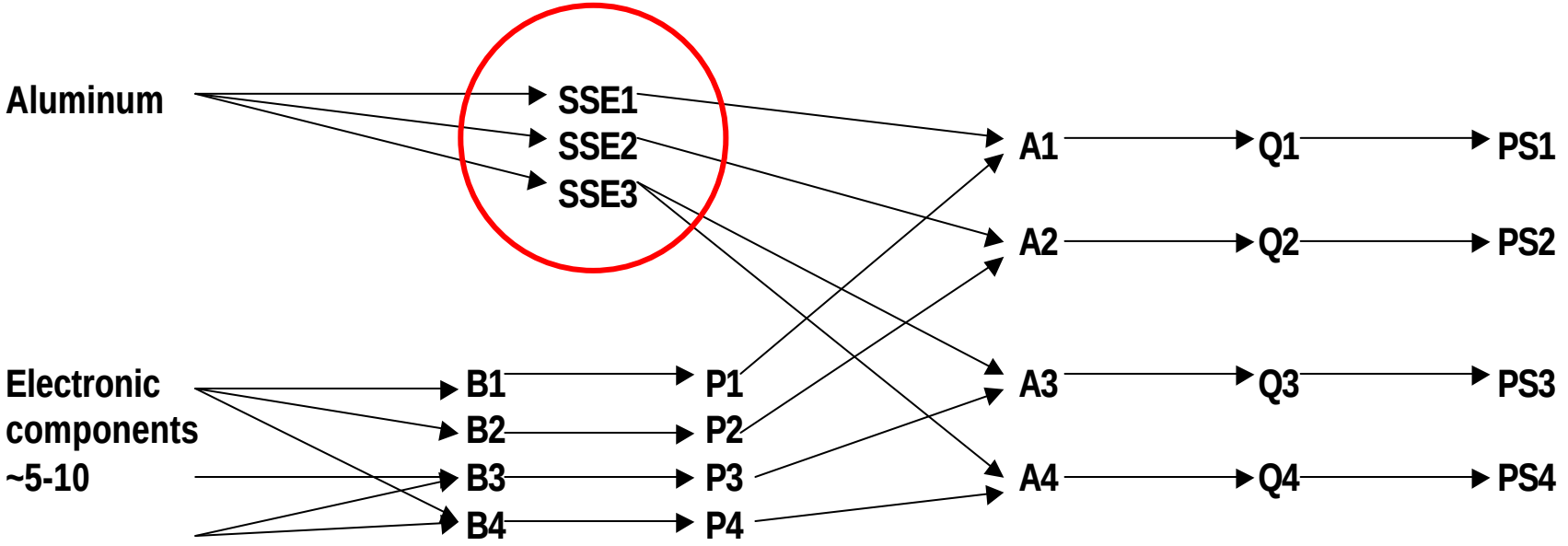
Case 2: IPS (2/7) – Process and Cash Flow Chart





Case 2: IPS (3/7) – IPS Operates in a T-Plant





Case 2: IPS (4/7) – CM Implementation Details

- Injection:
  - **Change engineering to allow:**
    - ★ Pre-paration of work going through the constraint
    - ★ Standardization of work done by the constraint (layouts, sizes)
    - ★ Decouple sawing/stamping from engraving
  - **Use own machinery for custom made products with high T first**
  - **Offload remaining sawing/stamping/engraving of standardized parts to external supplier**
  - **Use different aluminum supplier who replenishes aluminum inventory within one week instead of four weeks**
  - **Train staff in all operations**
  - **Buy additional machinery (further elevation) in expectation of increasing demand**
- DBR:
  - **Drum (Constraint) = engraving**
  - **Buffer = sawed/stamped aluminum parts ready for engraving**
  - **Rope = MPS of engraving**

Case 2: IPS (5/7) – Implementation Results

RESULTS AFTER 1.5 YEARS COMPARED TO LAST "TRADITIONAL" YEAR

- Sales increased by 10%
- NP increased by 21%
- NP is divided into:
  - **Rewards paid (incl. owner's prime)**
  - **Rewards reserved (incl. owner's prime)**
  - **Investment reserves (until total reserves reach a ceiling)**
- On-time shipping of 98% without night/weekend work
- Higher satisfaction and better quality of life due significantly reduced overtime/night work
- TVA calculations helped with the application for a loan

Case 2: IPS (6/7) – TVA Table and Constraints Report

TVA table

			Current	Previous	Delta
Sales			***145.721 €***	***153.732 €***	***- 8.011 €***
TVC	RM	21.761 €			
External manufacturing		31.865 €			
TV utilities		1.756 €			
Packing		376 €			
Total			***55.758 €***	***56.987 €***	***- 1.229 €***
Throughput			***89.963 €***	***96.745 €***	***- 6.782 €***
OE					
Wages		46.216 €			
Rent		490 €			
Utilities etc.		1.376 €			
Other		4.367 €			
Approved increases		- €			
Total			***52.449 €***	***52.769 €***	***- 320 €***
Budgeted OE			***52.500 €***	***52.500 €***	***- €***
NP			***37.463 €***	***44.245 €***	***- 6.782 €***
		Rewards paid:	***7.493 €***	***8.849 €***	
		Rewards reserved:	***16.858 €***	***19.910 €***	
		Investment reserve:	***7.493 €***	***8.849 €***	

Constraint Exploitation Report Engraving

	Current	Previous	Delta
Available constraint hours:	*160*	*176*	*-16*
Regular downtime (hours)			
PM:	0	0	0
Other:	0	0	0
Total regular downtime (hours):	*0*	*0*	0
Total available constraint hours:	***160***	***176***	***-16***
Irregular downtime (hours)			
Breakdown:	1,5	0	1,5
Unavailability of operator:	0	0	0
Total irregular downtime (hours):	*1,5*	*0*	*1,5*
Idle	*2*	*0*	*2*
Constraint hours used:	***156,5***	***176***	***-19,5***
Ito available capacity:	***98%***	***100%***	***-2,19***
Ito potential capacity:	***98%***	***100%***	***-2,19***

Throughput per available constraint hour:	***562 €***	***550 €***	***13 €***
Throughput per constraint hour used:	***575 €***	***550 €***	***25 €***

WHILE STRUCTURE IS AUTHENTIC; NUMBERS HAVE BEEN CHANGED UPON CLIENT REQUEST!

Case 2: IPS (7/7) – Reward Structure

- Rewards reserved:
  - **30% if combined ?NP ≥ 0 and NP always > 0 for 12 consecutive months**
  - **30% if combined ?NP ≥ 0 and NP always > 0 for 18 consecutive months**
  - **40% if combined ?NP ≥ 0 and NP always > 0 for 2 years**
  - **Remaining amounts are reserved to cover losses (NP<0)**
- Owners' primes are paid out of rewards
- Rewards are shared between employees based on an FTE-basis, all other differences are reflected in base payment
- Amounts for rewards paid and reserved are "normal" personnel cost and need to cover all charges!

Experiences

- Significant increases in NP without expensive gimmicks!
- TRIS creates a transparent win-win situation for owners and employees
- Companies focus on their constraints
- Increased internal and external transparency of RIS
- Employees and management/owners appreciated:
  - **Use of TOC logic trees as easy to understand tools for problem solving and communication**
  - **TOC education, increased knowledge about own organization**
  - **POOGI**
  - **Easy to understand and meaningful measurement system**
  - **Improved communication (Q+Q)**
- Introduction of TVA measurements was relatively easy (Excel)
- Improved external transparency (cf. loan-approval process with bank)

☑ TRIS works and yields results!

Issues and Outlook

- Additional implementations should show if approach works in larger settings
- Additional implementations may show negative branches to be trimmed
- TRIS is not compatible with any current union-management-salary agreements; unionized companies may currently not be able to implement TRIS for all employees and managers

Bringing it all together

- Root causes to the failure of traditional RIS include:
  - **lack of internal and external transparency**
  - **focus on local optimization**
  - **cost-world-thinking**
  - **short-term instead of a long-term perspective**

- A TOC-based RIS (TRIS) is built on injections:
  - **Mandatory TOC education for everybody**
  - **Explicitly base rewards on successful CM, use TVA accounting and trends**
  - **Management provides regular information about constraints**
  - **Encourage increasing throughput while controlling operating expense**

- Two cases have shown how TRIS can be successfully introduced and yield significant results within a short period of time