„Thinking“ Engineering/New Product Development System Prior SOP 1/5
Performance Assessment – Benchmark vs Client

2009

Client – Big Enterprise: e.g.
- We are the global leader for innovation !!!
- We are recognized as the Benchmark !!!
- Score 2+ (4 weeks earlier) !!! 1-5; 1= Best 5=Worst

1.	Cost:	600 – 700 %
2.	Manpower:	550 – 750 %
3.	Quality:	800 – 950 %
4.	Time:	200 – 350 %
5.	Productivity:	400 – 500 %
6.	EC/DC:	750 – 900 %
7.	Innovation:	700 – 800 %

What is the Impact on Revenue & Profit ?

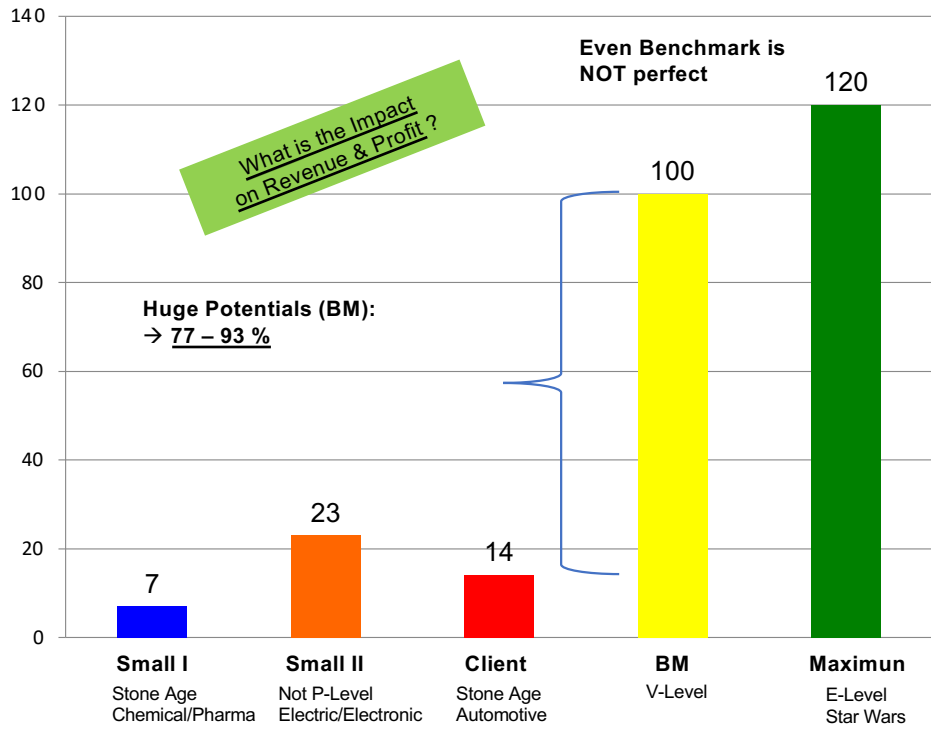
→ Performance: (prior SOP) – **Score 14 (Client)** vs 100 (BM) vs 120 (Maximum) Not on radar !!!

→ Performance: (after SOP) – Is even worse **600% – >1.000%** (Domino-Effects) Not on radar !!!

Benchmark: Realized **ALL** „Trade off Goals“

Better & Faster & Cheaper & Less Risk & More Innovation & More Customer Satisfaction & More Flexibility & More LL & More Profit & More Employee Satisfaction & Less People Turnover & …..

3 Performance Assessments



„Missing Opportunities“ ➔ Huge Impact on Cost, Revenue, Profit

1. **Quality Problems**
   6 Months prior SOP — **4,2 Mio $**
2. **Manufacturing Cost**
   ~13% > Target Cost — **4,8 Mio $**
3. **Time To Market (~100% ➔ ~13 Mo.)**
   ~5,5 Months too late — **14,7 Mio $**
4. **Late Design Changes**
   6 Months prior SOP — **7,8 Mio $**
5. **Development Budget (FTE)**
   ~31% > Budget — **6,1 Mio $**
6. **...** — **??? Mio $**

→ ALL Missing Opportunities + ALL Additional Costs + … = GAP / POTENTIAL
→ Situation AFTER SOP: e.g. DC 6/9/12 Months AFTER SOP
→ Consider Cost for Total Life Cycle or Cost Impact on next New Projects (e.g. Staffing too late)
→ Purchasing Price vs Cost before vs after DC ? Benchmark vs Client ? WHY ? E.g. Price ~57% vs Cost ~8% (via 4 DCs) !!!
→ ~83% of all „Supplier Problems“ are caused by LCC-Suppliers
→ ...

Performance Initiatives NPDS (last 10 Yrs.) Client

Summary

1999 - 1999

✧ Various Global Benchmarking Studies (e.g. NPDS, NPD, PDP, FFE, ...)

✧ A major Business Re-Engineering

✧ Several minor / major Process Re-Engineerings (e.g. Stage Gate Process, V-Model, ...)

✧ Fuzzy Front End, R&D, Innovation, Portfolio (several activities), …

✧ Lessons Learned Database, Knowledge Database, ...

✧ New IT-Systems and Software (e.g. Virtual Design / Mock up, ...)

✧ Simulation Software (Design, Production, Tooling, M&E, Test, Flow, Cost, Quality, ...)

✧ More / Better Design Reviews / Checklists / Rigorous Control / Tracking, Central Staff Team, ...

✧ FMEA, SPC, DFM/A, QFD, VoC, FEA, VE, VM, TC, TQM, VSM, Fast Prototyping, Robust Design, ...

✧ Heavy Weight Program Champion, Matrix Organisation, Customer / Platform Teams, ...

✧ Design for Re-Use, Platform, Modularization, Standardization, Mass-Customization, ...

✧ Low Cost Design, Outsourcing of Design, Design Cooperation, ...

✧ Crossfunctional Launch / Quality Teams, Run&Rate 12 Mo prior SOP, ...

✧ War room, Co-Location, Frontloading, Off the Shelf, Crossfunctional Development Teams, SE/CE

✧ Transfer Lean Thinking / Principles / Tools from Lean Manufacturing to Engineering

✧ Six Sigma, Lean Six Sigma, Lean Innovation / Development, Agile Development

CKSF:
➔ 80% - 90% - NOT on Radar
➔ 10% - 20% - On Radar: BUT: …

✧ These initiatives are amazing – But consider the Output not the Input

✧ Huge Investments – But no / very little ROI

✧ Copy & Paste Approach – But: …

✧ 4 - 5 Steps back, Learning Curve is lower, …

Conclusion NPD Client
Major Problems & Differences NPD – Benchmark vs Client

Summary

→ This in not „Product Development – But „Try and Error“ – „Just do it“ – Missing nearly all major pillars, …

→ Heavily „frontloaded“– But now „more people“ got lost in the „Fuzzy Front End“. At the end added more cost only, but the result was the same

→The „FFE“ is still beyond your control. But separates the „Winners from the Losers“. E.g. Drives ~80% of Total Life Cycle Cost

→ In many times if not always, the BM is moving into quite the opposite direction. Not on your radar

→ Now – You are running faster – But in the wrong direction (Huge Waste of Time)

→ 4-5 Leadership-Tasks done by a single person (LL5) vs We do not have these People. (Need 4-5 People + 1 for 3Cs) = 1 : 5/6

→ Project Leader most wanted Job#2 (CEO#1) vs You can not win, but lose only. (Not a promotion)

→ No firefighting (prior/after SOP) at all vs Huge army for firefighting – Few Farmers vs Many Heros

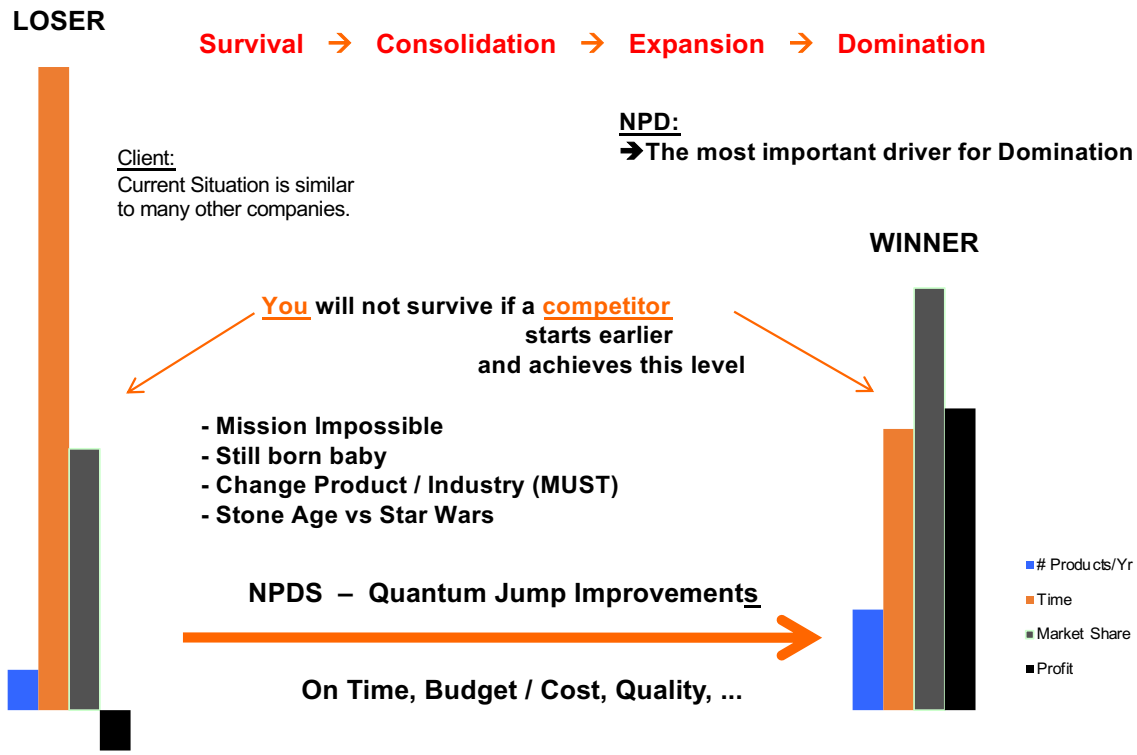
→ Quality at SOP (1-2 w start up) was better than Quality at EOL 7-8 Yrs (6-12 m start up)

→ Same Tasks: start early/late, duration 2-4 w / 6-12m, Top Down / Bottom Up, spec at start / end, … – Same or Different Product?!

→ The current business model within Engineering that sustained you for ~50 Yrs is no longer sufficient to sustain profitability and survival for the next years

→ Applying Continuous Improvements or Business Re-Engineering will not close this gap. (3Ks)

→ Need out of the box Thinking


LOSER
Survival → Consolidation → Expansion → Domination
NPD:
➔The most important driver for Domination
Client:
Current Situation is similar
to many other companies.
WINNER
You will not survive if a competitor
starts earlier
and achieves this level
- Mission Impossible
- Still born baby
- Change Product / Industry (MUST)
- Stone Age vs Star Wars
NPDS – Quantum Jump Improvements
On Time, Budget / Cost, Quality, ...
Products/Yr
Time
Market Share
Profit

Survive and Dominate – Turnaround
„NPDS – Profitable Growth – Quantum Jump Improvements“

✧ This is not a fashionable trend. This is not to differentiate from your competitors

✧ This is survival or non survival. Either you dominate or you will be dominated

✧ The customer is god, timing is sacred, quality is a must, K/E is a major pillar, ...

✧ Create & Sustain a systematic, predictable, balanced stream of fresh and profitable NPDs, JIT/S

✧ The fundamental engineering problems are not natural – Can be fixed

✧ Even the „FFE“ that separates „the Winners from the Losers“ is no longer out of control – Benchmark!

✧ Create & Sustain a Vigorous Learning Machine

✧ Balance all Stakeholders (Customer, Employee, Shareholder, Partner, Environment, Government)

✧ As the Engineering Stream dominates all other sub-streams the whole business model / stream will change dramatically too,