

Innovation through Knowledge Transfer 2009:
Research with Impact

Institute of Knowledge Transfer/
Kingston University

Using information systems to drive process change:
an aerospace industry example from the KTP scheme

Hampton Court Palace
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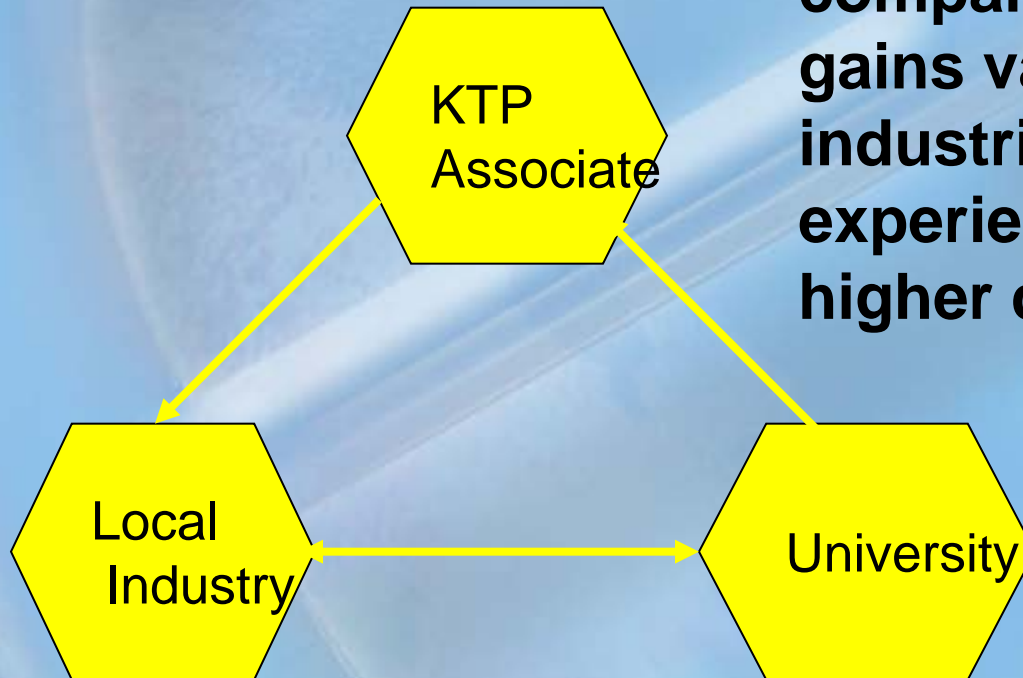
About today

- The KTP scheme at the University of Gloucestershire
- The KTP company (aerospace industry)
- Project implementation
- Benefits and process change
- Selling and Supervising KTPs



KTPs at the University of Gloucestershire

KTP - The Three Partners



Key role in company project; gains valuable industrial experience and higher degree

Provides expertise and supervision; knowledge transfer with local industrial base.

Subsidy for strategic project that enhances corporate performance

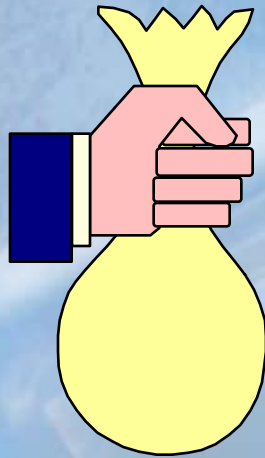
Typical 2 Year Operational Budget

KTPs at the UoG

• Associate salary costs	54,000
• Academic support (40 man days)	19,500
• Associate training	4,000
• Travel & subsistence	4,500
• Equipment	3,000
• Total	£85,000

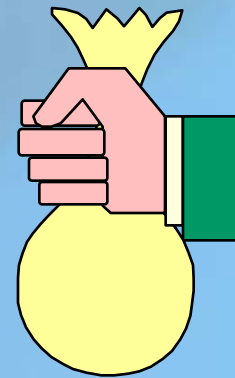


Programme funding for a two year project



Government

£42.5K



SME

£42.5K

KTPs at the UoG

- Since 2003, UoG has secured funding for 53 KTP projects
- Of these, 10 were never started because the company partner withdrew
- Of the remaining 43 projects:
 - 28 have been related to information systems or software development
 - 11 were based on new sales and marketing developments
 - 3 focused on new product development
 - 1 delivered general efficiency improvements in a local authority



KTPs at the UoG

- Of the 43 projects, 39 have been with SMEs, 4 with large organisations (2 public sector, 2 private sector)
- SMEs have come from many industry sectors:
 - software houses
 - Construction companies
 - office supplies company
 - assembly and distribution (for equipment for disabled)
 - pharmaceuticals packaging
 - contract packaging
 - environmental services
 - landscape architects
 - project management services
 - electronic funds collection
 - agricultural feeds manufacture
 - roof component manufacture



The KTP Company

ASP Aeroengine UK

- **ASP Aeroengine UK**
 - located in Stonehouse, Gloucestershire
 - part of the ASP group, considered the largest bearing manufacturer worldwide
 - HQ is based in Sweden
 - 250 staff
 - £17m turnover
 - 7% of world market in aeroengine bearings
 - Customers include major aircraft engine manufacturers - Rolls Royce, General Electric



ASP Aeroengine UK

- **ASP Aeroengine UK**

- In 2004 it became clear that the company needed to be more efficient in its operations to retain and grow market share, particularly in securing and extending contracts with major customers.
- A key element of the resultant strategy was the upgrade of shop floor engineering systems and associated process improvement
This became the focus of the KTP project



Project Implementation

Project Implementation

<i>Task Name</i>	<i>Start</i>	<i>Finish</i>	<i>Duration</i>
Document business processes, system/data	03/04/2007	14/12/2007	184d
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Project Implementation

Product Development

Quality Management

Manufacturing
Planning

Product Repair

Product Change

Manufacture
Product

Finance Management

Payroll

Sales Order
Processing

Project Implementation

“Project timelines are not visible.”

“Kit lists info are not always available and can be incomplete ”

“There is nothing in place to capture ‘lessons learnt’ from shop floor”

“There are too many paper-based processes”

“There is duplication of information and manual data re-entry in the shop floor”

“Engineers spend 10 - 15% of their time looking for product information”

“Having 6 weeks, not 4 would make a difference to shop floor load balancing on Racing”

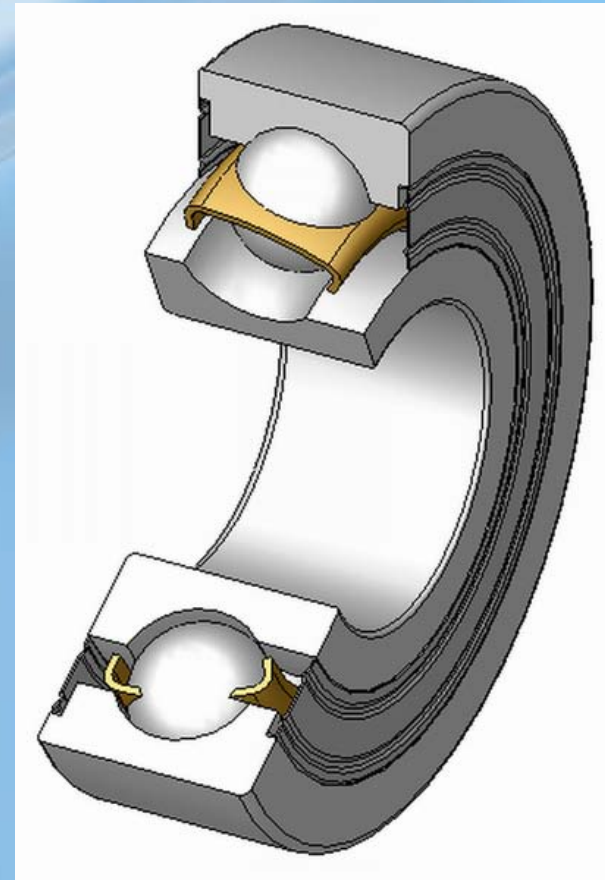
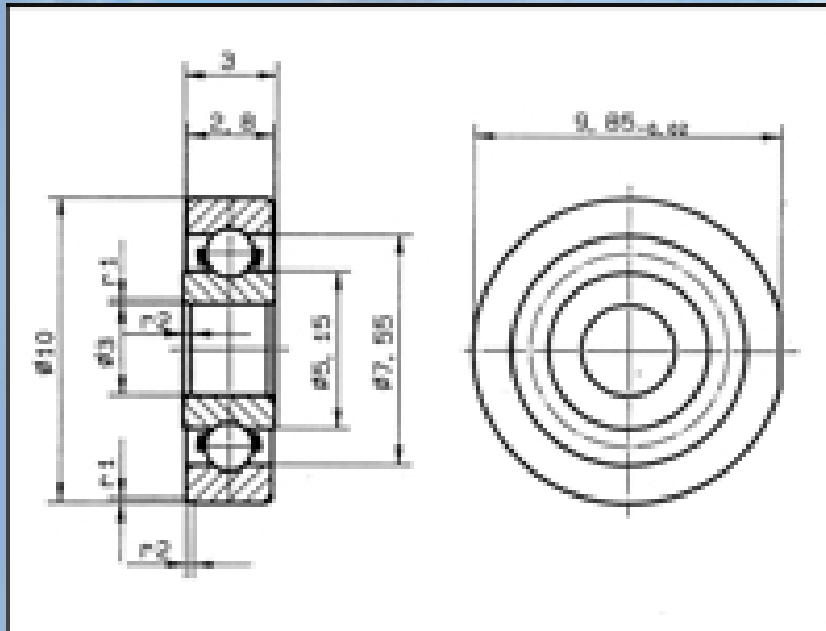
“80% of information is stored unstructured. Decisions are made on 20% of facts”

“There are 97 different databases being used and managed”

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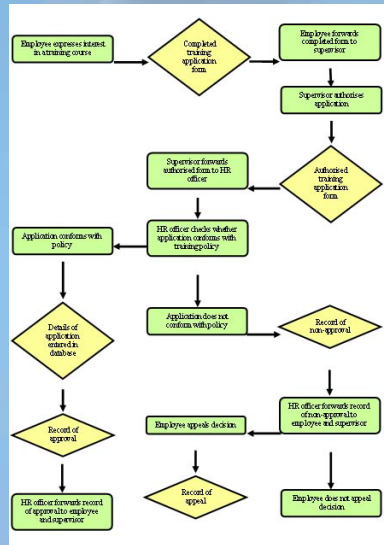


Project Implementation

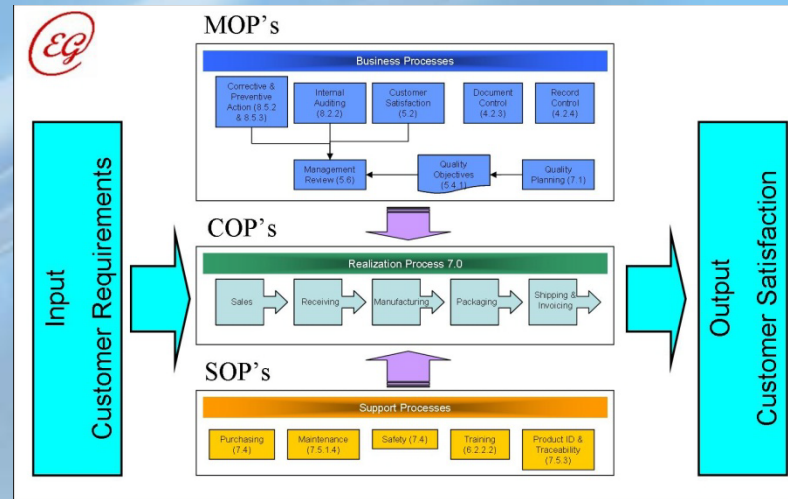
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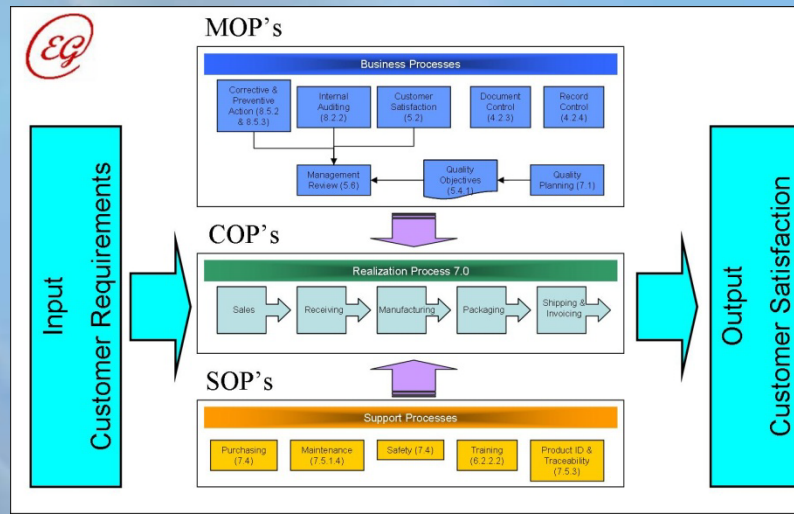
ASP Stonehouse



ASPGroup



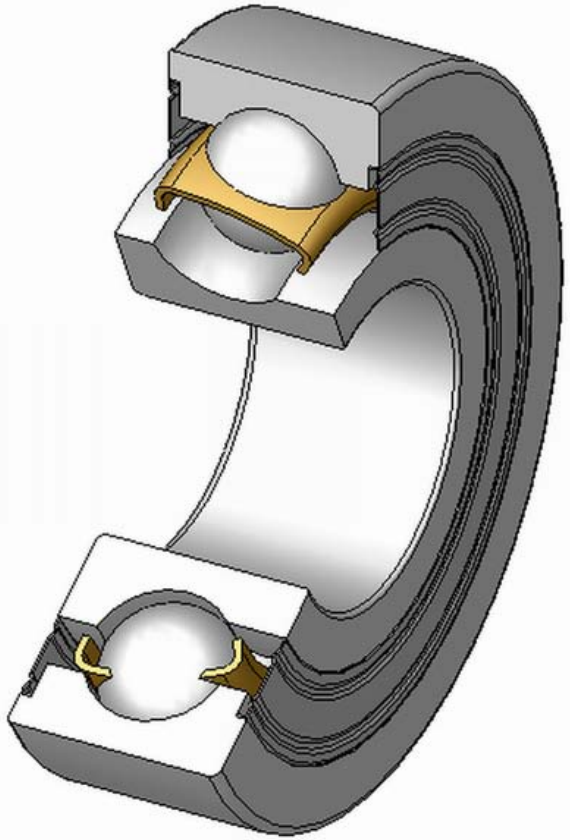
New ASP stonehouse



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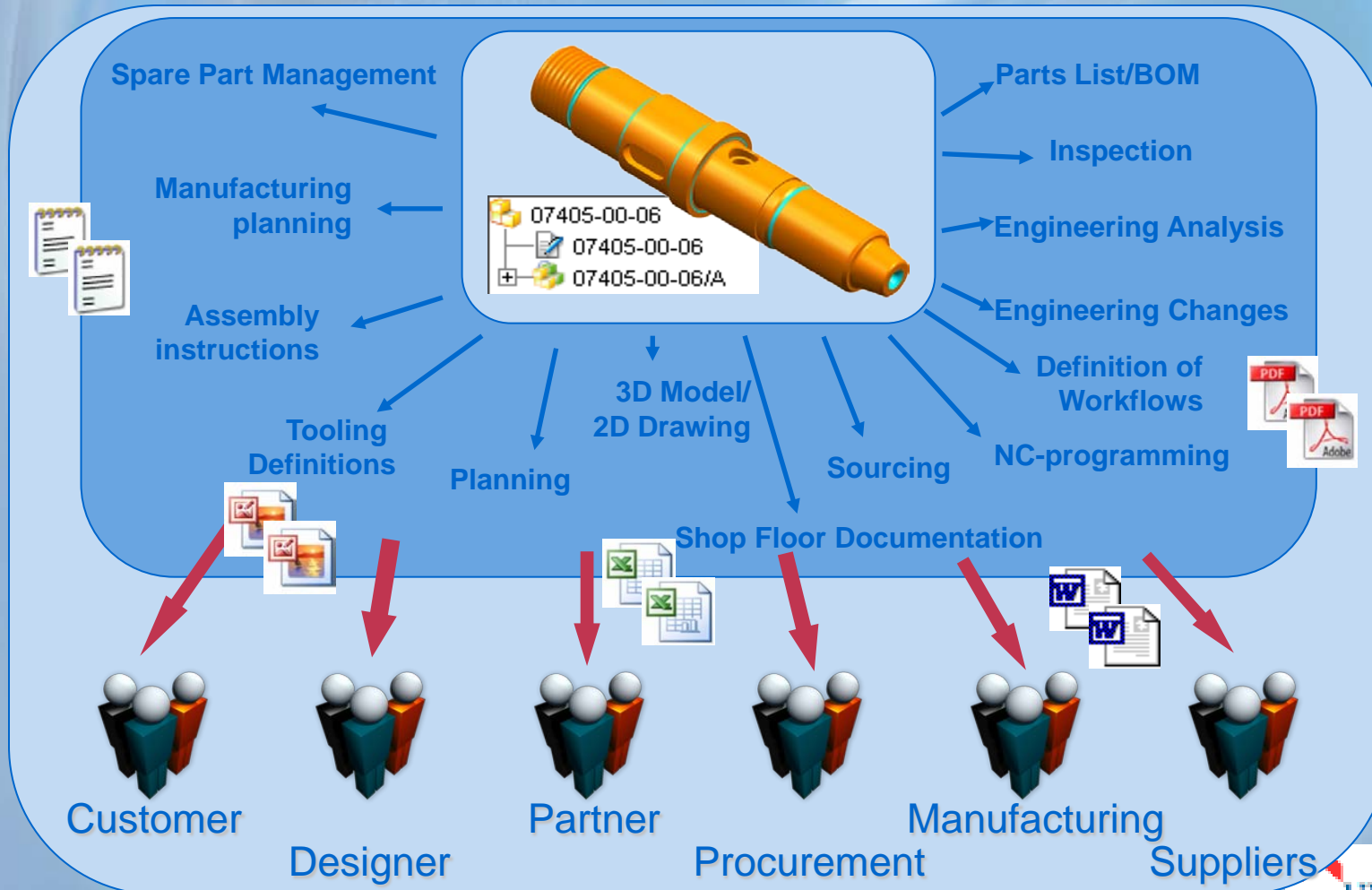
Project Implementation

- Knowledge capture and re-use
 - Where is the company knowledge stored?



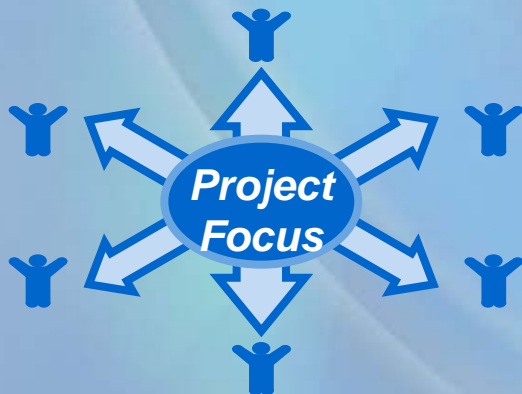
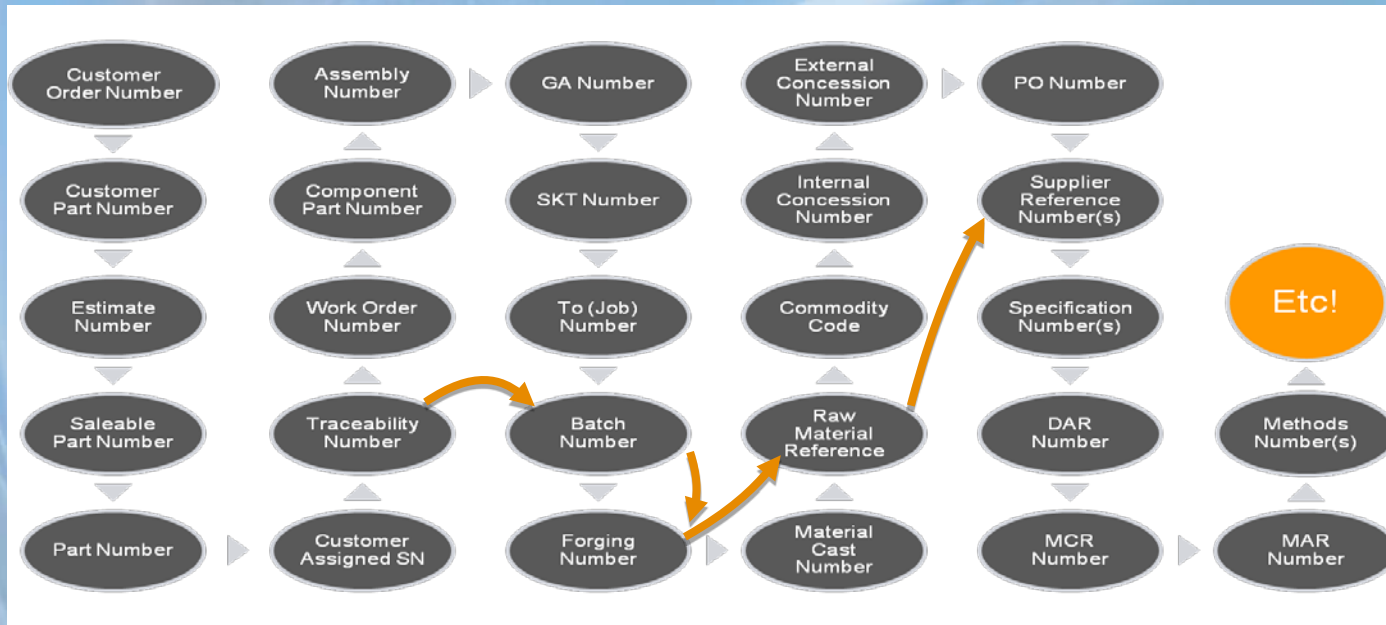
Project Implementation

- Communication and collaboration



Project Implementation

- Product and process management and visibility



ALIGN

- People
- Processes
- Tools

Project Focus



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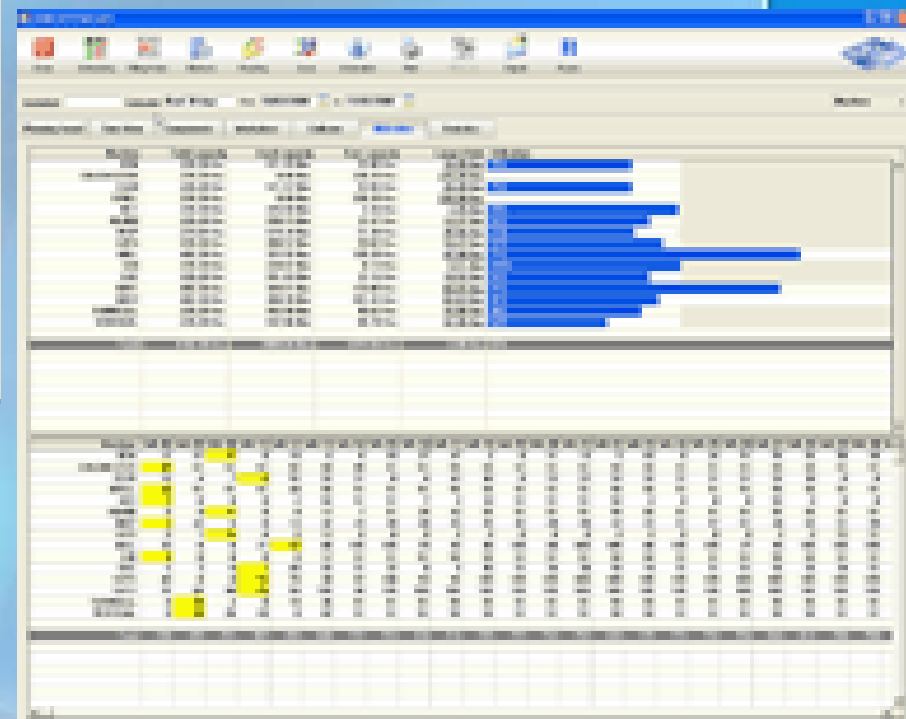
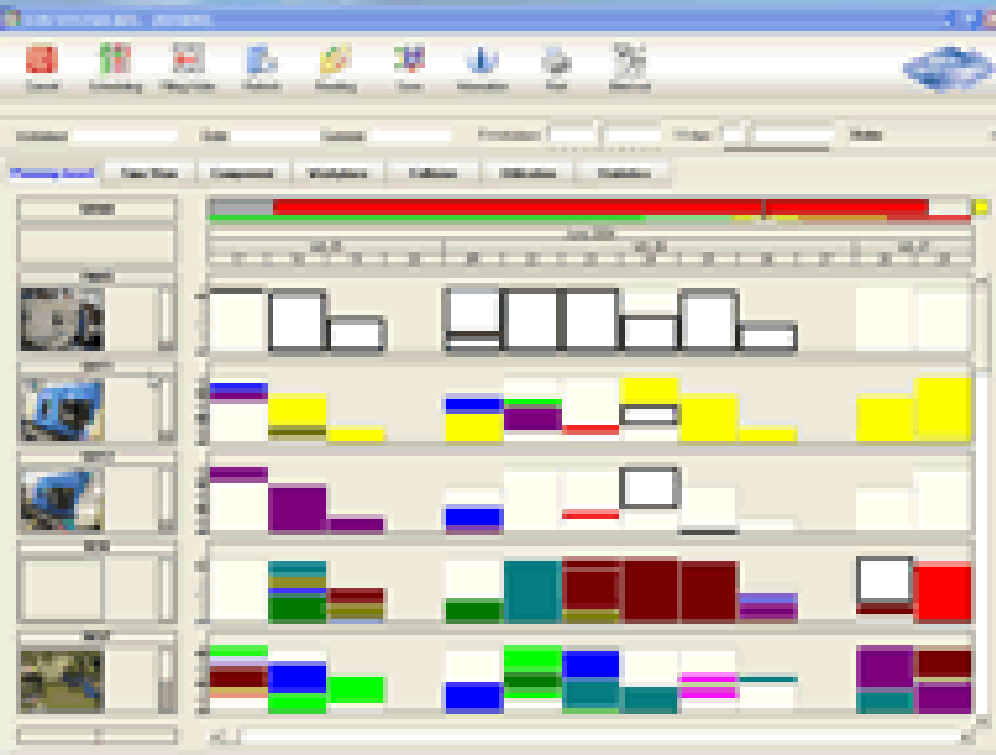
Project Implementation

- 6 months to get raw material
- Hundreds of parts done everyday
- Just in time policy (stock avoidance)
- Customer looking for its parts
- Where is the current bottleneck?
- What part should go first?
- Why do we have finish goods in stock and parts the customer wants are late?

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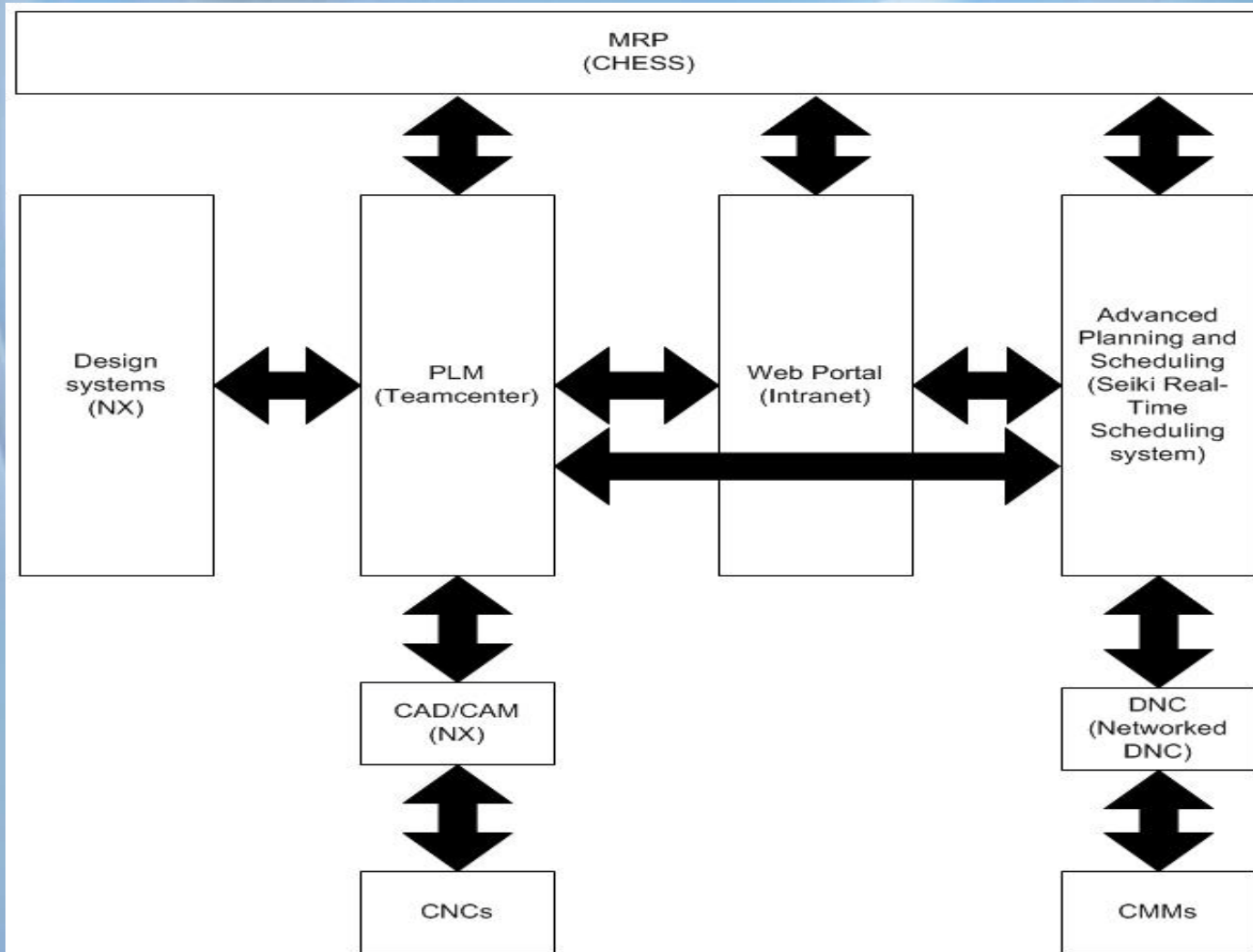
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Project Implementation



Benefits & Process Change

Process Change - alignment around product channels

	Channel 7	Channel 6	Channel 5	Channel 4	Channel 3	Channel 2	Channel 1	
Turning Operations								Heat Treatment
Miling Operations								
Face Grinding Operations								
External Grinding Operations								
Internal Grinding Operations								
								Assembly
								Inspection

Benefits and Process Change

- Total invested: ~ £300K
 - Software
 - Consultancy
 - KTP
 - Training
 - Labor (Staff working in the project -> not producing)
- Payback: 3.5 years
- ROI: ~ £1M Over 10 years

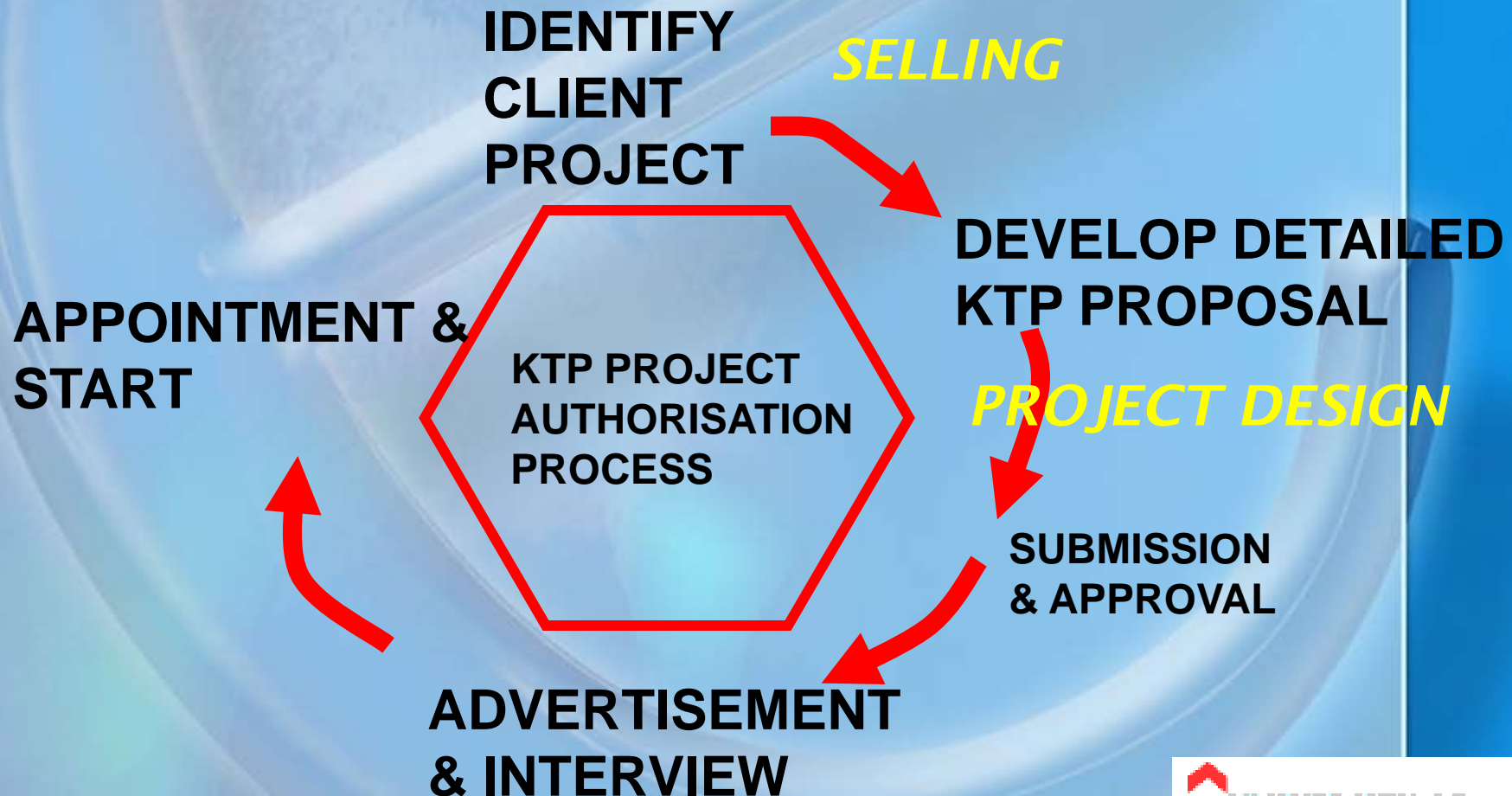
Benefits and Process Change

- Improvement on business processes
 - New design and engineering processes with 3D
 - Better decisions on supply chain
 - Processes aligned with group processes
 - New machine programming processes
 - Innovative shop floor layout
 - Reduction of product lead times from 90 to 45 days
 - Integration between CAD/CAM/Machines
 - Integration between PLM and CAD/CAM
 - Integration with tooling

Selling & Supervising KTPs

KTP PROJECT LEADTIME

Minimum elapsed time: 3 months



KTP Selling

Develop in depth product knowledge

Know the KTP products backwards.

Target the right profile of company

Rapidly growing profitable SMEs are ideal

Develop a sales team with the right experience, skills and attitude

Move to a selling culture with strong creative development skills

Customise the KTP product offering

Position KTP benefits and proposition depending on company context and requirements.

Develop different routes to market & ways of selling

Target appropriate networking events, conference presentations, newspaper opportunities, student placement links, part-time student opportunities

Explore company business plan to unearth KTP opportunities



KTP Project Design

Establish the nature of the project in outline with the company partner

Take the lead as regards filling in the application forms

If you leave too much to the company or the academic, momentum can be lost

Develop a good working relationship with the KTP Adviser

Identify the company financial profile early on

There can be problems with company financial profile – better to find out early

Focus on the work plan and project deliverables – follow the ‘golden thread’

Take the lead in attempting to quantify benefits



KTP supervision

The 'academic supervision' is more project quality assurance, project direction

Develop project management and consultancy skills in your supervisors

Set up a weekly control group, and insist on weekly minuted meetings

If you lose a shared understanding of what is going on, risk of project failure increases

Develop an 'esprit de corps' with the Associate and line manager

Develop a team spirit focused on project delivery

Add value beyond the project scope; act as an account manager as well

Look for a second KTP or other business opportunities in the company

Never give up, be patient – always try to find a way forward

