



# New Inkjet Product Development



Clive Ayling  
The Technology Partnership plc





## NPD

- New Product Development with industrial inkjet
  - near-office, commercial, industrial applications
  - using “industrial” printheads
  - tens to thousands of printers per year



## topics

- a view on 'what's new' for industrial inkjet
- the NPD process and the initial study phase in detail
- short cuts to fast NPD



## credentials

- TTP is largest *independent* development services company
- concept to production and each sub-phase in between
- dozens of NPD projects every year
- involved in digital print technology for two decades





## what's not new

- industrial inkjet driven by
  - OEM's using Xaar, Dimatix (Spectra), Epson printheads
  - OEM's using own printheads (various US and Japanese)
  - small technology development projects
- success in
  - wide format flexible vinyl
  - wide format flatbed
  - wide format textile





## what's new

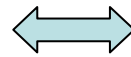
- continued multiplication of Eastern developers of wide format equipment using 50-80pL drops
- consolidation of Western printer developers
- move from 30-50-80pL to <10pL drops in West



## what's new

- move from 50pL to <10pL drops in West enabled by new heads:
  - **Toshiba Tec** 6pL sub drop

CA3, 318 nozzles, 4.8kHz



Xaar Leopard



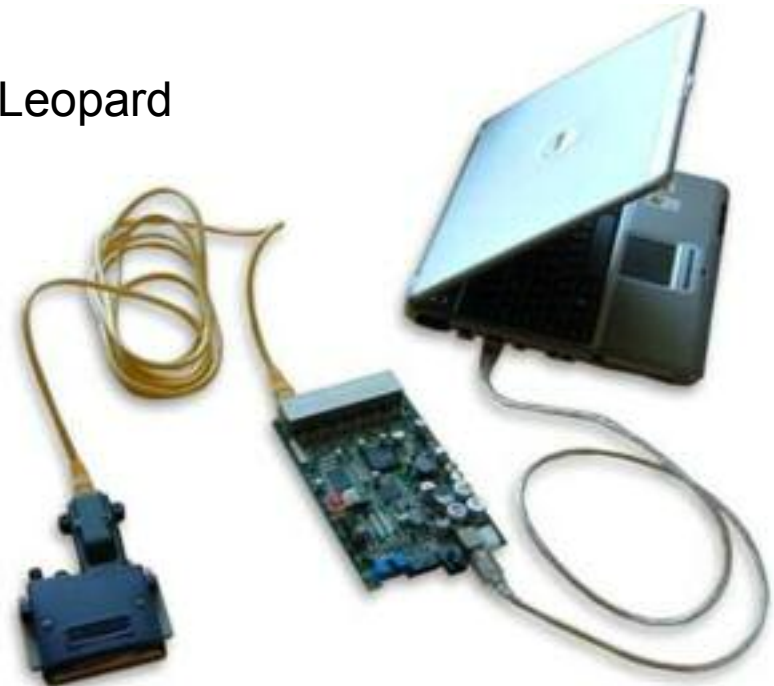
CA4, 318 nozzles, 6.2kHz



CE2  
636 nozzles  
6.2kHz



CA5  
318 nozzles  
3pL





## what's new

- move from 50pL to <10pL drops in West enabled by new heads:
  - **Agfa / Xaar 760** 8pL sub drop

760/8, 760 nozzles, 7.8kHz, 360dpi



Agfa M-Press



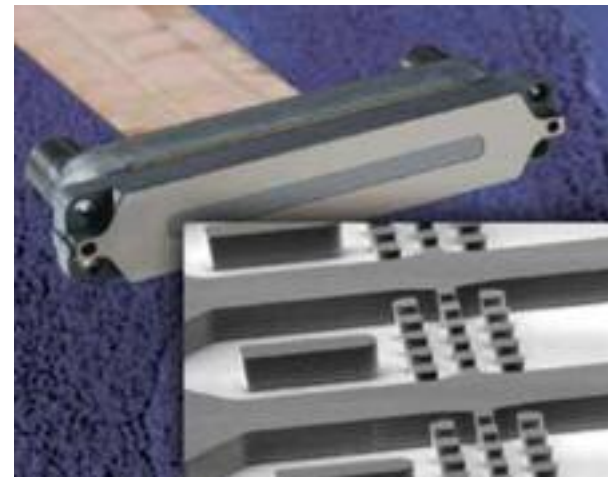
## what's new

- move from 50pL to <math><10\text{pL}</math> drops in West enabled by new heads:
  - Dimatix (Spectra) M-class, 7-11pL sub drop

M-class module, 304 nozzles, 4.8kHz



*Raster Printers Daytona T600UV*





## what's new

- move from 50pL to <math><10\text{pL}</math> drops in West enabled by new heads:
  - Xaar (HSS1) “1001”, 6pL sub drop

HSS1, 1001 nozzles, 7.2kHz, 360 dpi



*EFI Jetrion 4000 UV labeller*





## what's the bleeding edge of inkjet?

- capital cost of colour print engine
  - 100-200 \$ per m<sup>2</sup>/hr
- low photo quality but not real offset quality
- <1 shift reliability





## what's coming up?

- many new niches where existing technology fits
- impact of the Xaar 1001 flow-through ink concept
- challenge from EP in \$1000 to \$20,000 cost products
- continuous tone print quality from Tonejet presses
- move of HP, Kodak, Epson into industrial areas
- an advance of water-based inks towards non-porous media

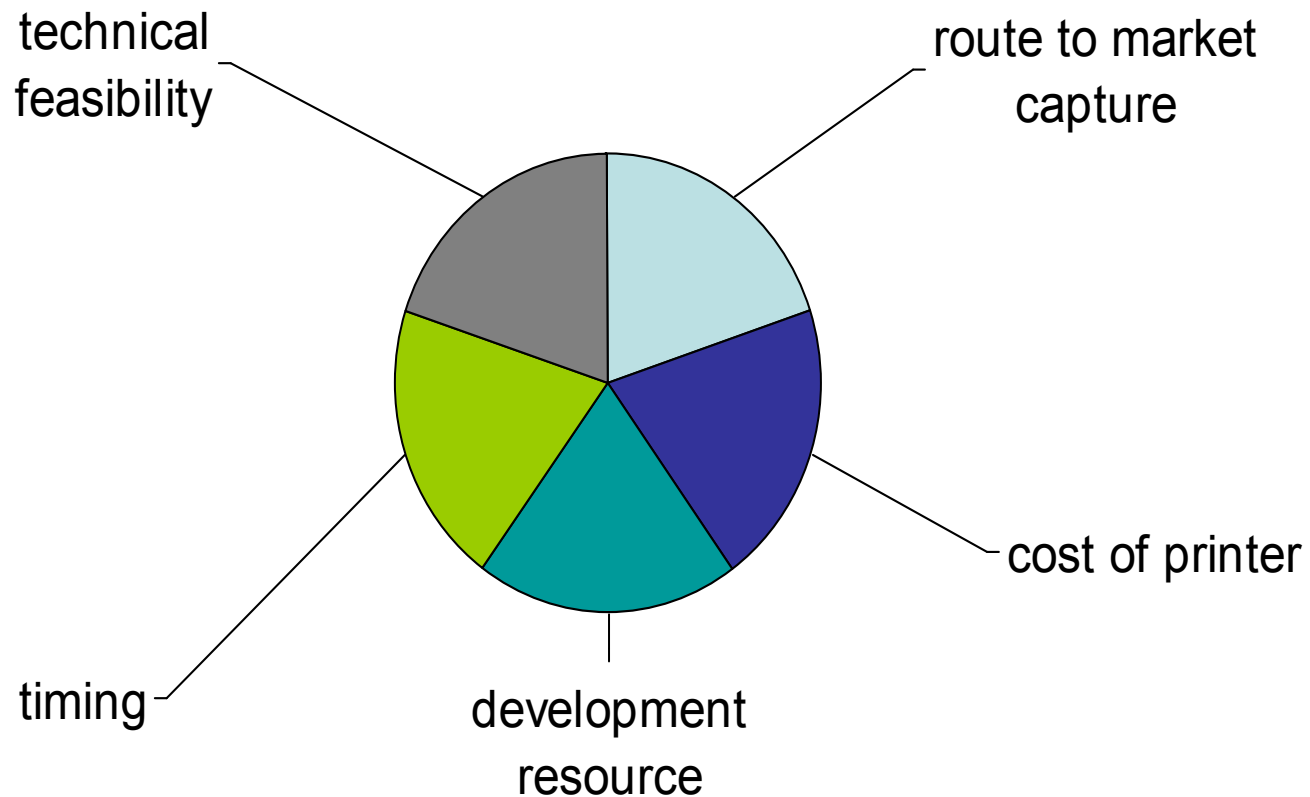


## NPD with inkjet

- the study phase
  - *selecting the strategy and devising tactics to meet the spec*
- the first iteration
  - *confirming the tactics*
- prototype development and beta site trials
  - *the rush to develop*
- transfer to production
  - *the start of revenue generation*

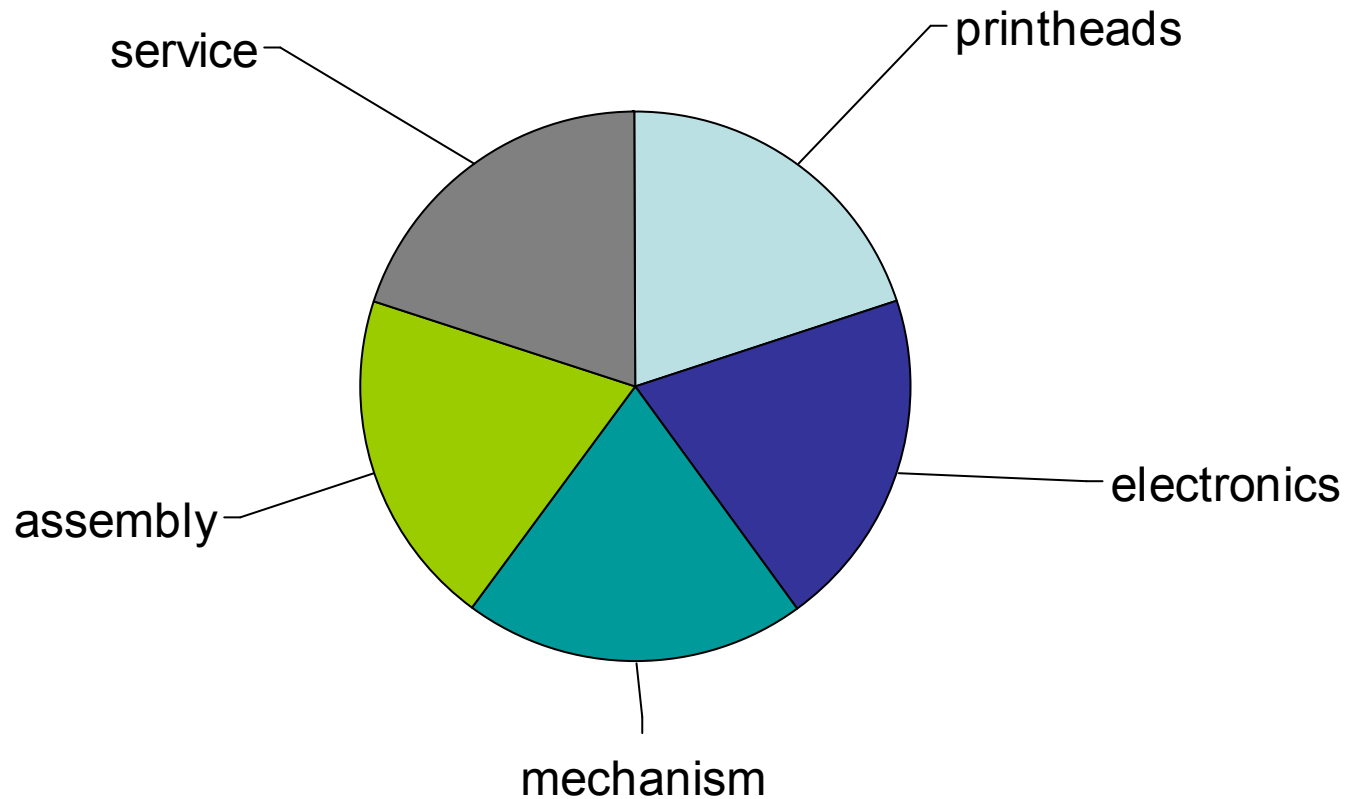


# the study phase contents



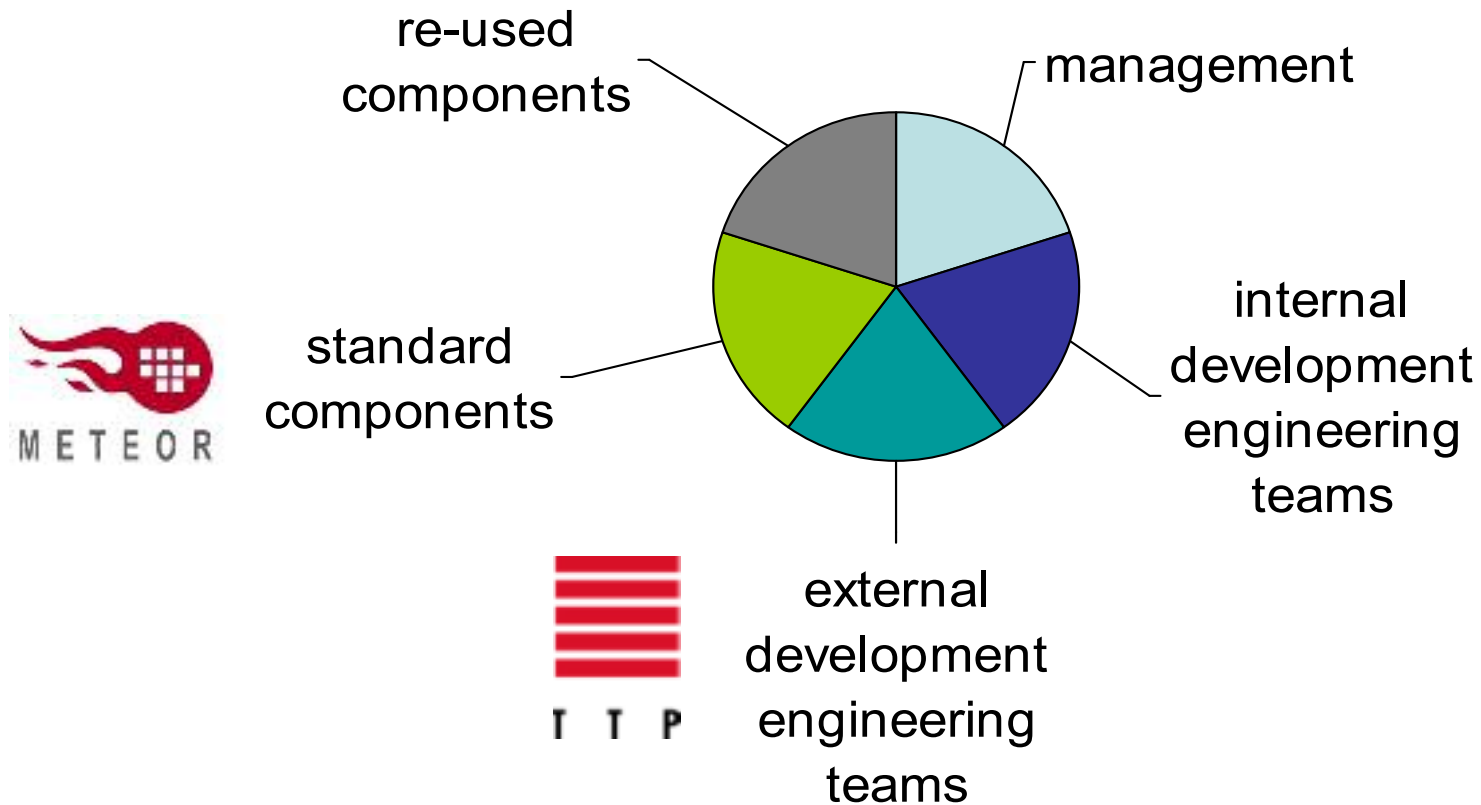


# printer cost components



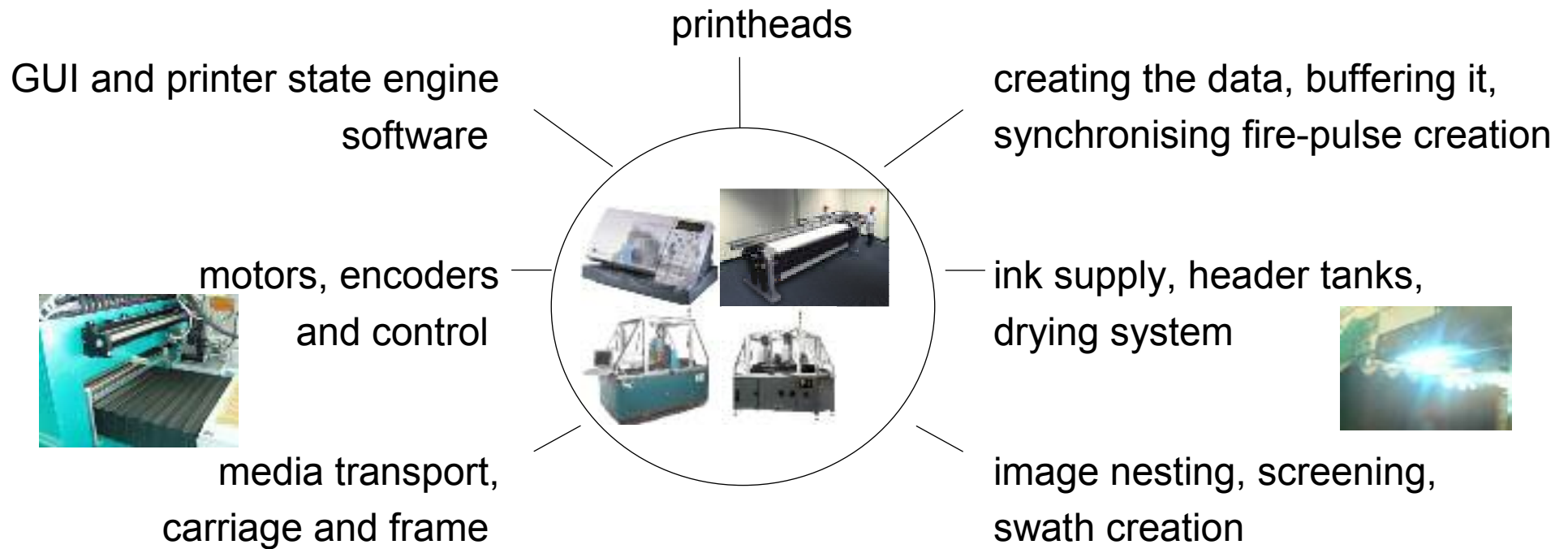


# development resources





# technical feasibility





## study phase summary

- how can the result be achieved?
  - can we avoid new technology development?
  - have we seen all the alternatives?
  - what is the outline design?
    - technical feasibility
    - printer cost estimate
  - what is the plan?
    - resources, timescales
    - off-the-shelf components



## short cuts to fast NPD

- avoid new technology, but apply engineering innovation
- use experts throughout  
*(you can't afford not to)*
  - study phase
  - implementation phases
    - *assembling the prototype is the quick and easy part*
  - transfer to production
- use off-the-shelf production-ready components



## short cuts to fast NPD

- off-the-shelf production-ready components  
e.g.
  - printheads
  - inks
  - printer electronics from Meteor
    - proven powerful data path software,  
electronics and expertise
  - printer software
- expand the license to get straight  
to market, fast





thank you

- To contact the speaker email [clive.ayling@ttp.com](mailto:clive.ayling@ttp.com) or tel. +44 1763 262626
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