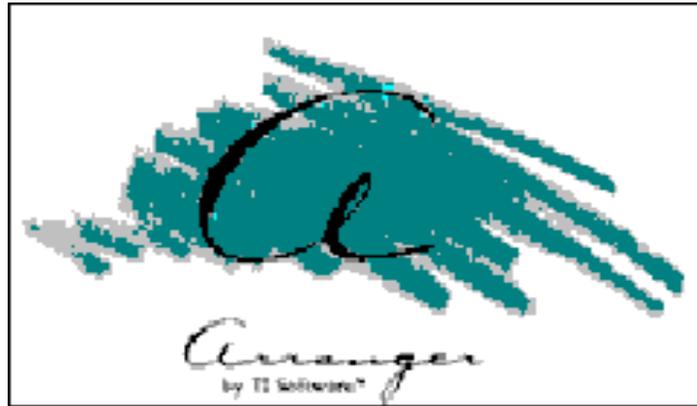


ARRANGER



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Overview of INCA



INCA is the system which collects data for calls passing between BT and other Telecom Operator's networks. This is used for Wholesale Billing purposes:

- To bill OLOs for their use of our network,
- To enable BT to verify bills received.



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Introduction

- An opportunity to radically increase the business process for the customer
- A trial of Arranger, an object oriented design tool, and an investigation of re-use.
- The INCA-Arranger Pilot project was set up to assess this tool.



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Business Requirement

The INCA system needs to adapt rapidly to changes in the Telecoms Market, to support BT's Interconnect business.

Developments must:

- Deliver in ever shorter timescales
- Adapt to Market changes
- Be flexible to changing business processes
- Provide an efficient & intuitive interface



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Business Problem

- A large number of new entrants into the UK telephony market means an increasing volume of Operators being billed by INCA
- A huge number of Tariffs need to be entered in a very short time.
- The Tariff data must be accurate and auditable.



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Project Aims

- To demonstrate a practical solution for the business problem, which conforms to the overall INCA requirements.
- This would enable BT to take part in the Arranger Beta test and influence the future direction of the tool.



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Scope

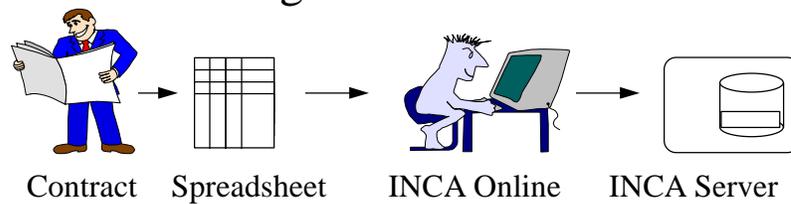
- Tightly defined due to limited resources.
- “Better to produce one strong example of Arranger, than a number of poor ones.”
- The Scope was restricted to the problem of entering Tariff information.



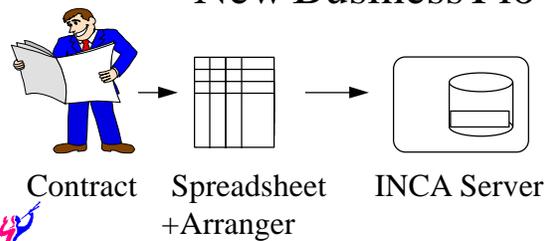
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Existing Business Flow



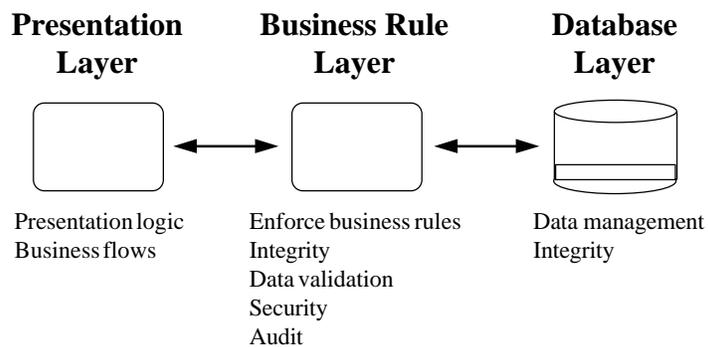
New Business Flow



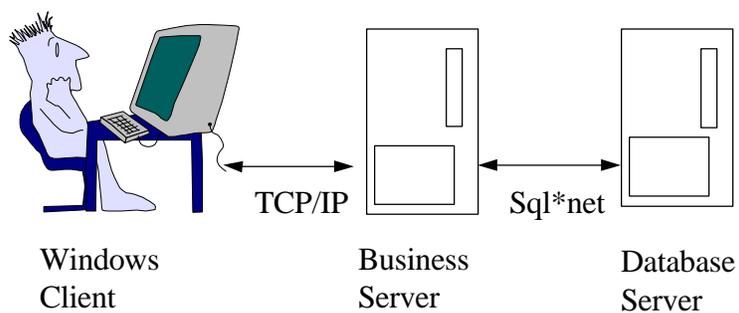
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3 Layered Architecture

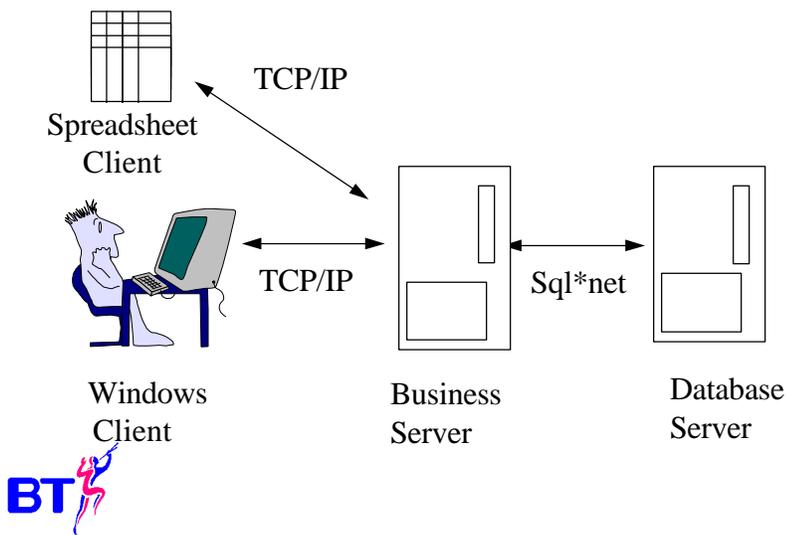


INCA Architecture

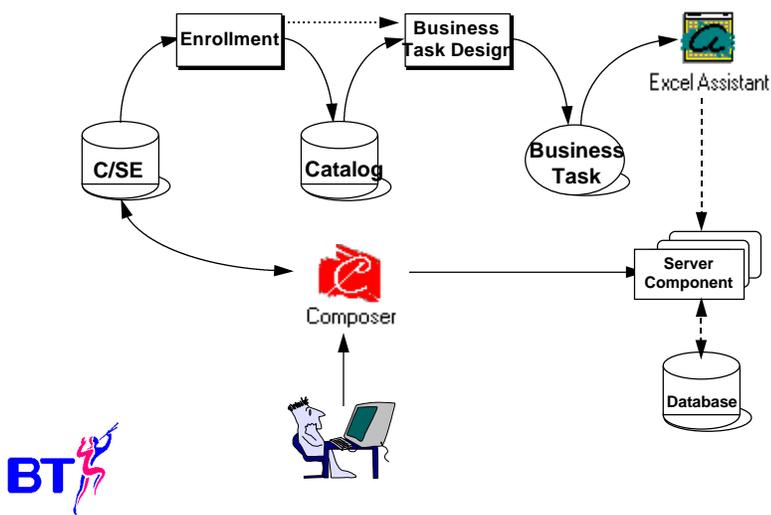




INCA and Arranger



Arranger Life Cycle





Composer Code



```

COMPO2: SERVER_LIST_TARIFF_PERIOD - Action Diagram
Diagram Edit Detail Generate View Options Window Help
[Icons]
SERVER_LIST_TARIFF_PERIOD
IMPORTS:
EXPORTS:
  Group View out_group (10,implicit,export only)
  Entity View out tariff_period (transient)
  mnemonic
LOCALS:
ENTITY ACTIONS: ...

READ EACH tariff_period
  TARGETING out_group FROM THE BEGINNING UNTIL FULL
  SORTED BY ASCENDING tariff_period mnemonic
  MOVE tariff_period TO out tariff_period

```

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Object Design



Arranger Enrollment - (Untitled)

File Edit View Options Tools Help

Context: Bns Inca Arranger Prototype

Candidates (Encyclopedia)	Current
Tariff	Tariff Period
Tariff Group	Server List Tariff Period
Tariff Group Detail	
Tariff Period	
Server List Tariff	
Server Add New Tariff	
Tariff Period Detail	
Tariff Timing Allowance	

OPERATION: Server List Tariff
<No documentation>

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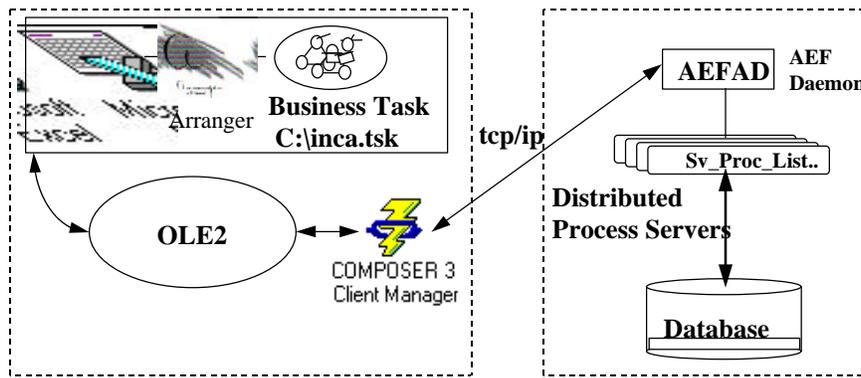
Excel Assistant



Microsoft Excel			
File Edit View Insert Format Arr			
B11		TST1	
A	B	C	
1	Svr List Tariff Period		Status: E Completi Last run
2			
3			
4	Out Tariff Period [1 to 10]		Mnemonic
5	Value 1	CHEP	
6	Value 2	DYTM	
7	Value 3	FREE	
8	Value 4	PEAK	
9	Value 5	SPEC	



Arranger Architecture



Windows Desktop

Unix Server



Drop Down Lists



Microsoft Excel - BOOK1.XLS

File Edit View Insert Format Arranger Tools Data Window Help

Arial 10

Direction	Price List	WholeSale Call Class	Chargeband	Tariff Period	Call Cost	PPM Effective Date	Ineffective Date
ITR	17 SPARE2	344 MERCURY 090622	2	SPEC		06/10/95	09/09/95
STATUS	Refresh						
OUT	17 SPARE2	55	090692	9	CHEP	1	03/09/95
OUT	17 SPARE2	342	090692	9	CHEP	1	03/09/95
OUT	17 SPARE2	55	090692	9	CHEP	1	03/09/95

Tariff Work Sheet



Insert Row(s)



Microsoft Excel - BOOK1.XLS

File Edit View Insert Format Arranger Tools Data Window Help

Arial 10

Direction	Price List	WholeSale Call Class	Chargeband	Tariff Period	Call Cost	PPM Effective Date	Ineffective Date
OUT	5 KINGSTON COMME	344 MERCURY 01/06/92	2	SPEC		06/10/95	
STATUS	Refresh						
OUT	5	55	090692	9	CHEP	1	03/09/95
OUT	6	342	090692	9	CHEP	1	03/09/95
OUT	8	55	090692	9	CHEP	1	03/09/95
ITR	5	340	090692	9	CHEP	5	09/09/95

Tariff Work Sheet



Database Update/Validation



Microsoft Excel - BOOK1.XLS

File Edit View Insert Format Arranger Tools Data Window Help

Arial 10

Direction	Price List	WholeSale Call Class	Chargeband	Tariff Period	Call Cost	PPM Effective Date	Ineffective Date
ITR	14 GUERNSEY TELEC	344 MERCURY	01/06/92	2	5	01/06/92	01/06/92
OUT	5	55	01/06/92	9	1	01/06/92	01/06/92
OUT	6	342	01/06/92	9	5	01/06/92	01/06/92
OUT	8	55	01/06/92	9	5	01/06/92	01/06/92
ITR	14	344	01/06/92	2	5	01/06/92	01/06/92
OUT	14	344	01/06/92	2	5	01/06/92	01/06/92

Tariff Work Sheet



Exit state messages



Microsoft Excel - BOOK1.XLS

File Edit View Insert Format Arranger Tools Data Window Help

Arial 10

Direction	Price List	WholeSale Call Class
ITR	14 GUERNSEY TELEC	344 MERCURY 01/06/92
OUT	5	55 01/06/92
OUT	6	342 01/06/92
OUT	8	55 01/06/92
ITR	14	344 01/06/92
OUT	14	344 01/06/92

Tariff Work Sheet





Development Issues

- **Excel** :-Response time, Portability of spreadsheets, VB
- **IEF** :-Testing Server procedures relies on AEFc, Application assembly drives server functionality, Exit State passing.
- **Object** :-Ownership of object libraries, Rollout, Change management
- **Environment**:- Many operating systems, Complex network communications, Many components.



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The Future

- **Application Issues:**
 - Token Based Security
 - further Tariff functionality
 - audit trail
- **Opportunities:**
 - Enables the integrity of CASE to be combined with the flexibility of advanced presentation tools
 - Creation of re-use libraries of business logic
 - However the creation of these will be dependent upon the development strategies adopted.



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Summary



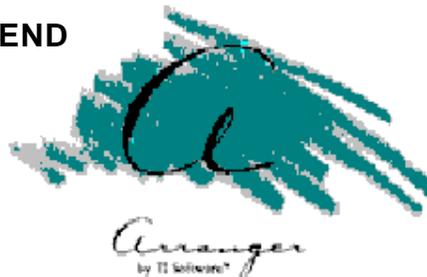
- Tactical solutions can be built to meet specific business needs, when Composer does not contain the functionality required.
- 1st Arranger release with limited functionality. Future releases likely to reduce the complexity of the code
- Strategically Arranger is a step toward re-usability and Object Oriented Methods.
- Overall a Successful pilot, leading to further use within INCA and a reference site for BT.



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THE END



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