#### Xoom for ClickSoftware Service Optimization

Use Cases

# Xoom Use Cases - Overview

• Saving configuration for future reference



Configuration comparison



• Dependency analysis



Configuration analysis and reporting



Configuration transportation



• Disaster recovery



### Xoom Use Cases - Overview

Configuration versioning



 Separation of concerns between teams



 Configuration library for various market conditions



# Saving configuration



- Results in a Xoom file representing the current configuration and data
  - human- and machinereadable XML format
  - only desired parts are included
  - environment-independent representation
  - includes Xoom meta-data

```
<Setting xoom:id="Setting[[Application]|Logic Domains|Appointmen</pre>
<Key>119416834</Key>
<Owner>[Application]</Owner>
<Category>Logic Domains</Category>
<SubCategory>Appointment Booking</SubCategory>
<Name />
<Body>
  <LogicDomain W6XMLVersion="1.0.0">
    <RelaxationLevel>0</RelaxationLevel>
    <RulesDomain>
      <RuleCriterias>
        <Criteria XMLVersion="1.0.0">
          <CriteriaType>3</CriteriaType>
          <KevSet>
            <Key xoom:ref="Rule[Assignment duration equals tas
            <Key xoom:ref="Rule[Do not schedule before now]">D
            <Key xoom:ref="Rule[Do Not Schedule Excluded Engin
            <Key xoom:ref="Rule[Engineer Availability]">Engine
            <Key xoom:ref="Rule[Index Rule (Region)]">Index Ru
            <Key xoom:ref="Rule[Match Engineer Working Hours (
            <Key xoom:ref="Rule[Match Number of Required Engin
            <Key xoom:ref="Rule[Match Region]">Match Region</K
            <Key xoom:ref="Rule[Match Skills]">Match Skills</K
            <Key xoom:ref="Rule[Match Working FRUs]">Match Wor
            <Key xoom:ref="Rule[Maximum Travel Time From Home
            <Key xoom:ref="Rule[One Assignment per Task]">One
            <Key xoom:ref="Rule[Planned SHS Travel Time Gap Ru
            <Key xoom:ref="Rule[Schedule only Active Engineers
            <Key xoom:ref="Rule[Schedule Work within Capacity
          </KevSet>
          <ObjectType xoom:ref="Collection[Rule]">Rule</Object
        </Criteria>
     </RuleCriterias>
    </RulesDomain>
    <ObjectivesDomain>
     <WeightedObjectives>
        <WeightedObjective>
          <ObjectiveKey xoom:ref="Objective[Grade according to
```

### Dependency analysis



- Xoom is aware of references between items
  - enables the identification of dependencies during import and export
  - enables dependency visualisation
  - enables renames, clean-up, orphan item removal



## Configuration analysis and reporting



- Reports summarising various aspects of the configuration can easily be produced
  - custom and built-in reports
- XML can be used to represent many things
  - tables, graphs, interactive web pages

Planned SHS Travel Time Gap Rule		YES	YES	YES		YES	YES	YES	YES
Schedule After Appointment Start		YES	YES	YES		YES	YES	YES	YES
Schedule Before Appointment Finish		YES	YES	YES		YES	YES	YES	YES
Schedule only Active Engineers	YES	YES	YES	YES	YES	YES	YES	YES	YES
Schedule to BP Engineers Only							YES		
Schedule to SHS Engineer Only									YES
Schedule Work within Capacity	VES								
Limitation per Job Class (BP + SHS)	TLS								
Schedule Work Within Contractor		VES	VES			VES	VES	VES	
Capacity Limitation		TLO	TLO			TLO	123	TES	
Schedule Work Within Contractor									
Capacity Limitation - Same / Next Days				YES					
for Client									
Today's SHS Travel Time Gap Rule									
TRIAL - BPs INCLUDED in Next Day	VES	VES							
Service 2pm cut off	TLS	TL3							
TRIAL - SHS INCLUDED in Next Day	VES	VES							
Service 4pm cut off	TES	TLO							
Objectives									
Engineer Skill Level Objective (NOT IN									
USE)									
Give Priority to High Priority Tasks	600	600	600	600		600	600	3	3
Same day. On Bayta Dalay			Cat	Ontinei-	Lining		- de la d	On De	uto Del
Same day - On Route Delay Set Optional Hours Same day - On Route Dela									
BP Dispatch SOI FOI FIN - Next Day (Mon-Thur) Schedule Monitor - In Da									
Schedule Monitor - In Day Update Purge Engineers Calendars BP Dispat									
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## Configuration comparison



- Configurations of two environments can be compared
- Production configuration can be verified against last recommended configuration
  - in case of problems, this could provide a clue
- Differences between configurations can be identified and visually represented using various standard tools



## Configuration transportation



- Synchronisation of configurations between different systems
  - development to test to production
- Support for full and partial configuration
- Interactive and non-interactive mode
- Support for automation

#### Disaster recovery



- When an implementation goes wrong, the ability to quickly revert the changes to the previous configuration that is known to work
  - no need to lose recent operational data like in the case of database refresh
- Support for full or partial revert of the configuration changes
  - useful when likely cause of the problems can be identified
- Note: this does not replace the need for full database backup that is still needed in case of database corruption

### Configuration versioning



- Enables regular configuration snapshots to be taken and stored
  - both taking snapshots and identifying the changes can be fully automated
- The history of every setting can then be identified
  - unlike in project documentation, this is never out of date and all actual changes in the system are covered
  - the ability to determine when a certain change was made
    - useful when a problem appeared at certain time, as we can see what changes were made at or near that time

#### Separation of concerns



- Different teams working on different parts of configuration
  - when changes are ready, they can be synchronised between environments using Xoom
  - partial implementations can be deployed to test, production and other development environments without affecting other parts of the system
- Enables new kinds of collaboration within and outside the company without the need to share the full implementation or operational data



- Various configurations can apply to different market conditions
  - heightened demand around Christmas may require longer appointments that allow more scope for optimisation
  - lower demand at other times may allow shorter appointments leading to higher customer satisfaction
  - snow or adverse weather conditions might require the scrapping of certain rules to allow the minimum set of services to be performed at all
- A set of well tested configurations can be saved and deployed tactically and in a targeted way using Xoom to quickly respond to varying market conditions

#### Glossary

- *Managed system* The software application or system managed by Xoom, in this case ClickSoftware Service Optimization.
- Configuration The parameters that define the behaviour of the managed system, e.g. rules, logic domains, agents, integration settings.
- Data The values that are produced and used during the operation of the managed system, e.g. regions or tasks. The former is *static* and the latter *transactional* data.
- Xoom is intended to manage the configuration and static data of the managed system, but not the transactional data.

### Glossary

- *Environment-independent representation* The representation of the configuration and static data of the managed system that abstracts away information that is tied to a single instance of the installed system, making such representation portable. Keys and UDP IDs are examples of information that can differ between functionally identical environments.
- *Xoom data* The representation of the Service Optimization configuration and static data including Xoom meta-data. Xoom's representation format is XML.
- *Xoom meta-data* The information about the identity of various parts of Xoom data, the references between those parts and information needed to transport the configuration between environments.
- *Xoom file -* The file containing Xoom data.

#### Glossary

- *Xoom type* The kind of information represented by Xoom. A few examples are scheme, groups and regions.
- *Xoom item* A specific, identifiable entity that is part of configuration or data represented by Xoom. Each Xoom item:
  - has a specific type;
  - has an environment-independent identifier.
- Xoom ID A unique identifier of each Xoom item, composed of its type and bar-separated environment-independent identifiers in square brackets a single identifier - Name
  - Region[London]

type

Setting[[Application] Logic Domains Standard]

multiple identifiers, the last one empty

bars separating identifiers -