

# Client Reporting and Technology

Presentation for the Pan-European Client Reporting Forum 2006

## Introduction

Powerful reporting-software capabilities are an essential prerequisite for a successful and efficient client reporting. The presentation will try to present answers or ideas to the questions like:

- » What are the architectures of typical reporting solutions?
- » What innovations will influence client reporting technologies?
- » Why do many systems fail to fulfill reporting requirements?
- » Is technology ready to automate all kinds of client reports?
- » Can technology keep up with increasing complexities in reporting?

## What is Client Reporting?

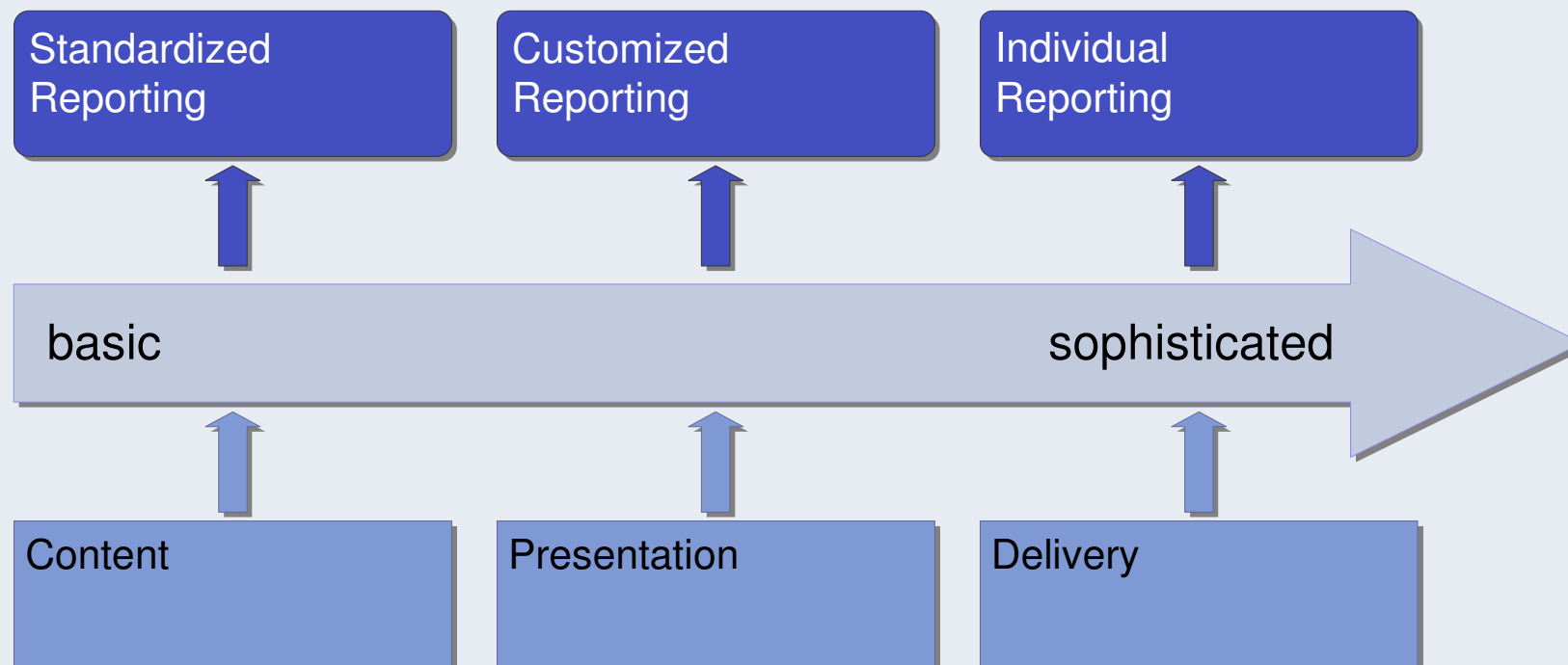
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Two topics – Our views:

- » Client Reporting Services Levels and Client's Service Requirements
- » Challenges in reporting to clients

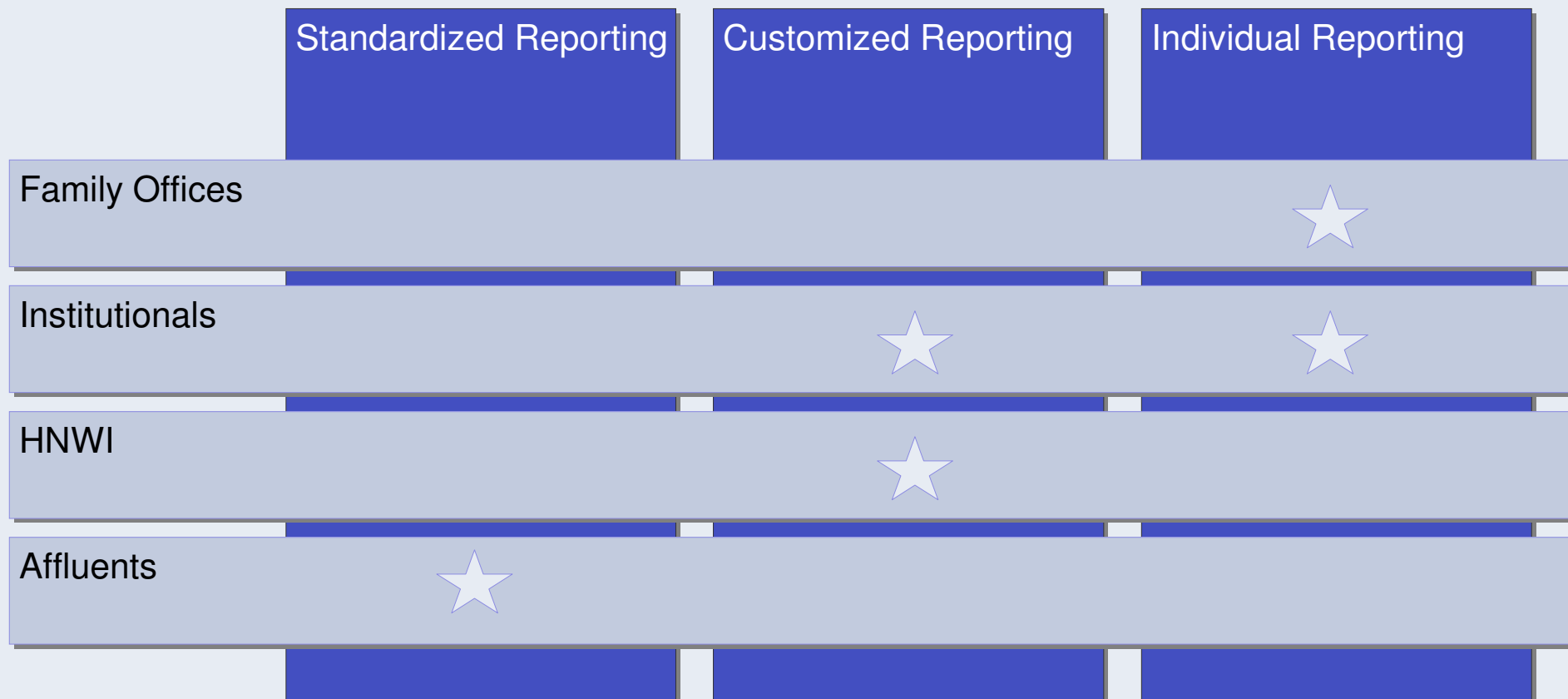
## Client Reporting Service Levels

The diagram shows three types of client reporting service levels from standardized to individual. The service parameters can be grouped into three categories: content, presentation and delivery.



## Client's Service Requirements

The following diagram shows what reporting strategies are required to serve the different client groups.



## Client Reporting Challenges

### Why is client reporting hard at all?

- » Client Reporting is a differentiation factor
- » Client Reporting is at the end of the banks or asset managers value chain
- » Bigger assets have higher requirements

## Architectures of Client Reporting Solutions

Architectures can be discussed with two different scopes:

Macro-Architecture:

» how is the reporting system embedded within a bank's systems

Micro-Architecture:

» how is a reporting system built up

» what are the components

## Macro-Architecture of Reporting Systems

The reporting architectures found within banks and asset managers can be summarized into the following:

- » Integrated Banking Systems
- » Best-of-Breed Analysis-Systems and Reporting-Tool
- » Investment Reporting Plattformen

## Integrated Banking Systems

Integrated Banking Systems can be a core banking systems for a private bank or a portfolio management system (PMS) for an asset manager. Client reporting is delivered as a standard module within the software.

- » high standardization, low costs
- » high throughput
- » low flexibility for layout as well as new analysis
- » service levels: standardized, potentially customized

## **Best-of-Breed Analysis-Systems and Reporting-Tool**

In this approach, gaps of the Banking System or PMS are filled by using highly specialized analysis tools as well as a generic reporting tool to define and produce client reports.

- » custom developments, not fully automated processes
- » high flexibility
- » high costs
- » low throughput
- » service levels: customized, potentially individual

## Investment Reporting Platforms

A professional investment reporting platform should support all service levels, multiple banking systems as well as the integration of best-of-breed systems.

- » highly automated processes for all service levels
- » high flexibility
- » moderate costs
- » service levels: standardized, customized and individual

## Micro-Architecture –Tiers & Components

### Three Tier Software Architecture

Presentation Tier

Application / Business Logic Tier

Data Tier

### Reporting Software Components

Layout

Analysis

Data Management

## Data Management – Functionalities

Data management plays an important role in client reporting because it is responsible for a big portion of reporting efforts and costs.

The data management component needs functionalities to:

- » deal with histories of data because investment analysis depends on lots of historical data and is sensitive to errors in these histories
- » allow quick integration of data sources including non-tabular data
- » allow restatements in a controlled manner by informing the clients or explicitly suppressing results to change
- » manage versions of data and reports similar to corporate financial reporting

## Data Management – Technologies

Today's technologies are not really suitable to support efficient data management.

Today's data management solutions are based on technologies like relational databases and ETL (Extract/Transform/Load)-tools. This setup lacks of:

- » Flexibility
- » Control
- » Consistency

## Data Management – Trends

New trends in data management technologies are:

- » Model driven development
- » XML/XQuery instead of RDBMS/SQL
- » Temporal Databases
- » Data Lineage
- » Workflows

## Analysis – Functionalities

Investment analysis can be seen as a framework of methods to aggregate raw data to information for the investment management process.

Ex-post functionalities are:

- » Valuation and exposure
- » Return calculation
- » Segmentation
- » Aggregation
- » Relative analysis of two investments
- » Statistics

All calculations should be highly customizable to the structure and investment process of the client.

## Analysis – Technologies

Investment analysis is a typical analytical application.

A good part of the analysis could be done by standard technologies like database queries and OLAP servers but others are some calculations are more complex. Transaction-based attribution is aggregating a lot of data in a manner database servers are not prepared to. This leads to:

- » investment analysis is typically a programmed module and expensive to change
- » performance is an issue
- » one current solution is to reduce flexibility for ease of programming and analysis speed

## Analysis – Trends

New calculations models and new technologies will allow flexible and fast investment analysis.

- » OLAP servers are enhanced with custom aggregation functions
- » new systems are self-optimizing calculations similar to what relational databases do today
- » increased computing power will solve most problems for ex-post analysis

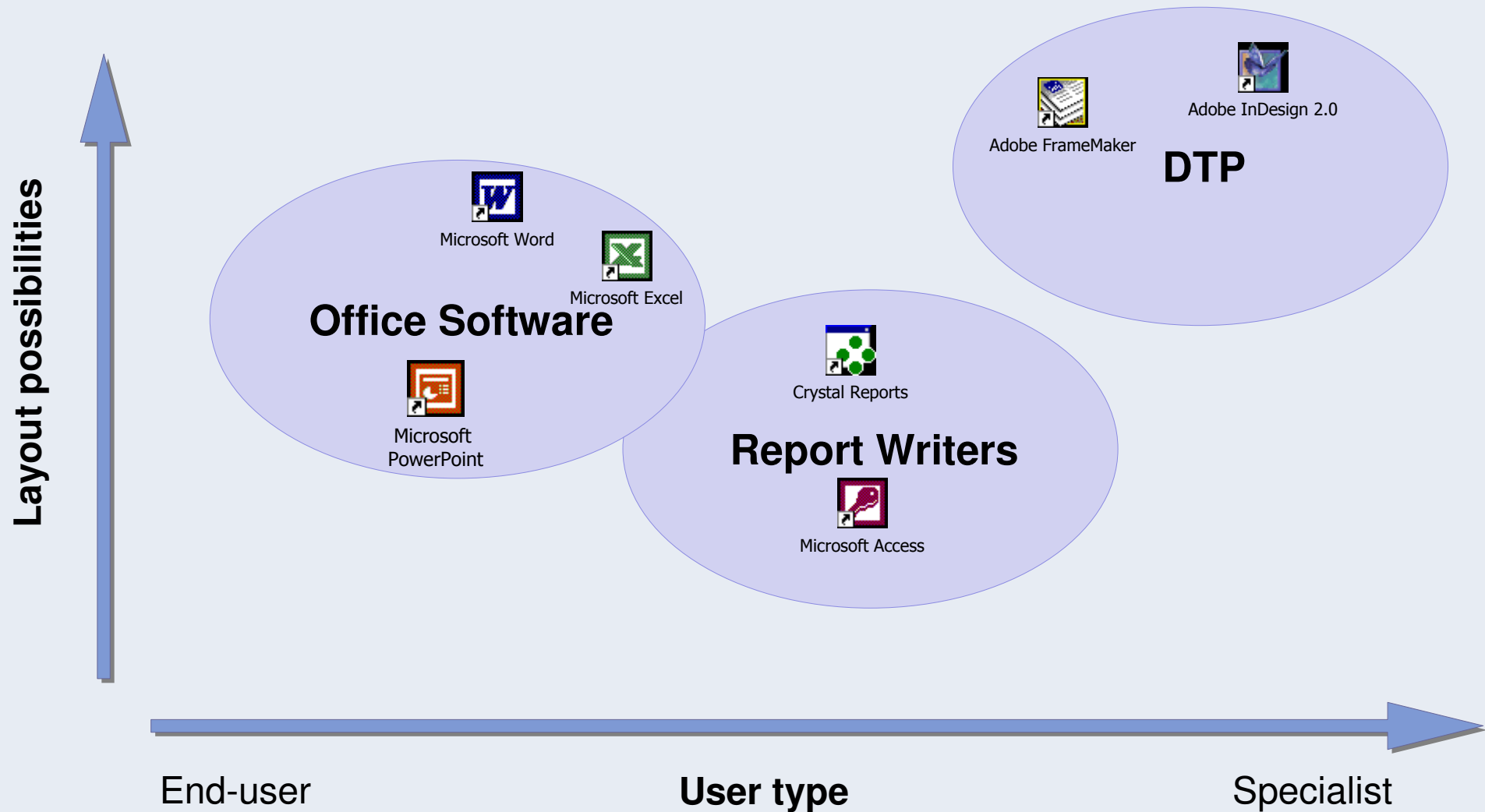
## Layout – Functionalities

The layout component has to deliver high quality documents.

To support the differentiation of the bank, reports have to adhere closely to the corporate identity and reach near-DTP-quality. Common topics in this area are:

- » page layout
- » text styles
- » charts
- » tables
- » flexible and dynamic document structure

# Layout – Technologies



## Layout – Trends

The following trends are found within layout technologies:

- » Office software is approaching professional layout quality
- » the layout is often specified by means of Office documents
- » Office technology is still not scaling well
- » multi-channel layout capabilities are possible but not for high-end documents

## Conclusions

Reviewing some of the questions:

### **Is technology ready to automate all kinds of client reports?**

- » Yes, today's technology can support from high-volume to flexible and individual reporting
- » No, there is no single technology doing this
- » No, the technology is still far from being intuitive and efficient

### **Can technology keep up with increasing complexities in reporting?**

- » Yes, technology is evolving very fast
- » No, because new possibilities lead to new requirements

**Thank you for your attention!**