

**PROJECT NAME / SUBJECT:** NW Mobile Application Platform (MAP)

**SPONSOR/PROJECT INITIATOR:** NetWeaver

**PROGRAM/PROJECT LEAD:** S, SUDHIR KRISHNA

**LEAD ARCHITECT:** RAMPRASADH KOTHANDARAMAN

**DEVELOPMENT:** ☒ SAP Labs, mainly in Bangalore  
☐ Partner/ISV \_\_\_\_\_

**Planned product release date:** With NetWeaver New York

**Underlying SAP NetWeaver release:** NW 2007

**Used SAP NetWeaver stacks:** ☒ ABAP ☒ J2EE

**Target platform (OS, DB):** **Server:** All SAP NetWeaver supported platforms  
**Mobile Devices:**  
 1. **OS:** MS Windows on laptops, MS Windows Pocket PC 2003 edition, Windows Mobile 5.0  
 2. **DB:** MaxDB on the laptop, MinDB, and DB2e

## Targeted market segments / sub-segments:

All industries and applications that need mobile applications that need data store and business logic on the mobile device and need to work in an occasionally connected mode are considered as target segments. In practice, these are large and mid-market customers since this product is a NetWeaver component and is to be deployed in conjunction with mySAP. Currently, SAP does not position the product as a standalone mobile middleware offering.

## Use cases targeted by the product:

- The product targets offline applications with business logic and data on the client. Current customer expectations are that we are able to support up to 30000 clients / devices against one middleware server.
- Centralized mass device administration and phased upgrade of clients during a major version change and patch deployment.
- To protect existing customer investments, backward compatibility is provided for existing mobile applications from SAP.

## Strategic goals SAP wants to achieve with the product:

- Enhancing end user productivity by making critical business data and applications available anytime anywhere
- Increasing the numbers of SAP licensed users / seats by extending the SAP's user base to professional workers like service technicians, truck drivers etc in addition to information workers.
- Platform adoption: Enable the development of (mobile) applications by customers, partners and ISVs.
- TCO reduction for operating a mobile application for our customers

## Mandatory product capabilities to address goals, use cases, and target market:

- Server side scalability is a critical non-functional requirement.
- Centralized mass device administration is essential to reduce TCO.
- WebDynpro programming model should be supported for developing applications that can run on PDAs and in 'occasionally connected' mode. This is essential for reducing the TCD.

## II. ARCHITECTURE

### Main Architecture Concepts and Decisions

- To run offline applications, we need to be able to centrally manage the deployment of applications and *relevant* business data to the mobile devices. This points to the need for a middleware that does application and data provisioning. This is a NetWeaver component.
- Since mobile devices come with varying platforms and form factors, it is necessary that the middleware is agnostic about the client programming model.
- Push of business object entities to the mobile devices / consumers.
- Generic synchronization services for handling bi-directional entity updates.
- Flexible and model driven data distribution rules independent of applications.
- Mass device administration and central administration & monitoring
- Familiar programming model and IDE support. WebDynpro is the chosen programming model.

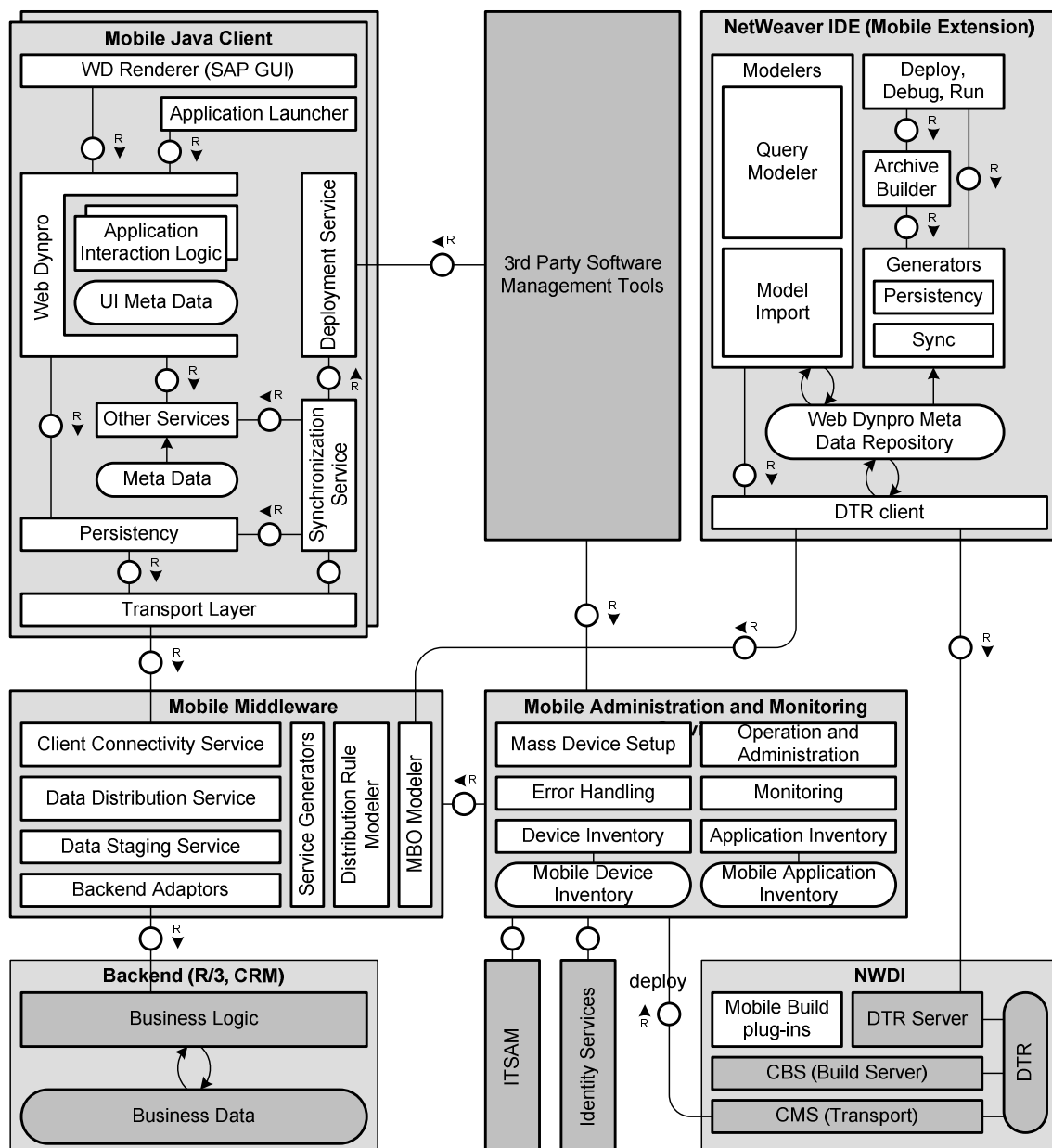


Figure 1: NW Mobile Overview

### What are known deficiencies of the current architectural concept?

Ideally, the data consolidation and distribution semantics and related generic services should be captured either in ESR or as extensions to business objects. The concept for this does not exist

today. Discussions are ongoing with NW PDEF to align with the SALSA initiative to address this gap in long term (Post NW 2007). The SALSA initiative is a domain specific meta model for EIM of NW.

#### **Which design time tools are used (ESR, VC, PCD, etc.)?**

For developing the client applications, the NW IDE is used, and going forward it would be possible to model offline applications using Visual Composer in the near future (NW 2007). In general WebDynpro and composition roadmap will be followed for offline application development. On the middleware side, a new standalone development tool is available.

#### **Total Cost of Ownership**

The following section lists the key TCO drivers and describes how the architecture addresses them:

- Manageability
  - Single middleware stack for all mobile applications from SAP  
Customers such as TÜV today need two middleware systems to manage two different applications on the same mobile device and this is a huge TCO issue for them.
  - Device management  
Mass device administration functionality together with integration of 3<sup>rd</sup> party device management software like Microsoft SMS.
  - Phased upgrade  
Architecture is designed to enable upgrade in a phased manner from existing versions of MI to NW NY. This is a very important TCO driver for many customers.
  - Maintaining data distribution rules  
Customers like Phillip Morris spent a significant amount of money to maintain the subscriptions for each of their 2500 users. The new architecture provides for generation of these subscriptions from distribution rules and business data from backend systems.
  - Centralised administration and monitoring: This is provided for in the architecture.
- Application development
  - Adopting the **same programming model across online and offline applications** reduces the costs associated with skill set in every customer project. Currently a mobile application development needs specific skill sets and this adds to the cost. Adoption of WebDynpro programming model mitigates this.
  - VC modeling of simple lightweight mobile applications without business logic will be enabled soon
- Runtime improvements and landscape simplification
  - Improve the runtime algorithms to provide for scalability and reasonable hardware requirements. Customer Polar for example, we needed 48000 SAPS for the MI server alone! Hence this is an issue of concern for customers and the architecture addresses this.
  - Simplify the landscape as compared to that of CRM Mobile, without the need for communication station.

#### **Deployment**

What are the possible deployment scenarios?

- As a part of NetWeaver standalone
- As a part of NW basis running underneath mySAP applications

#### **Maintenance**

Standard NetWeaver processes are followed.

#### **Architecture Documentation**

For further details and information see:

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