The Enterprise Architect and S/4HANA 1610 UX

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Agenda

The Enterprise Architect in S/4HANA Projects – in Brief

S/4HANA UX Fundamentals

Enterprise Architect– Role Overview

Enterprise Architect– Getting Started

Enterprise Architect– Advanced
Key Challenges

- Needs to understand and plan in a holistic way how technical innovations including the UX layer change business
- Needs to understand the advantages of UX improvements through Fiori

Key Responsibilities

- Needs to advise when to make use of Fiori
- Has to advise how to best leverage and innovate through Fiori
- Needs to understand the technology underneath Fiori
- Needs to understand integration possibilities with Fiori
Roles with User Experience Responsibilities in S/4HANA Projects

- **UX Lead**: Track UX goals, business roles, and activities in scope
  - **Enterprise Architect**: Confirm Architecture supports UX needs
    - **Basis Expert**: Ensure Server configuration, Security & Authorizations support UX needs
  - **Analytics Expert**: Deploy/Extend User Interfaces needed for the Business Process
    - **Functional Application Expert**: Deploy/Extend Analytics to support Insight to Action
  - **Project Manager**: Deploy/Extend User Interfaces needed for the Business Process

S/4HANA UX Fundamentals

An introduction to the User Experience of S/4HANA 1610 - based on Fiori 2.0

- Fiori Design
- Fiori Launchpad
- S/4HANA App Types
SAP Fiori bringing Great User Experiences to Enterprise Apps
Put People at the Center of Business and Technology

What makes a good User Experience

SAP UX Strategy
Fiori Design Principles

ROLE-BASED
Designed for you, your needs, and how you work

ADAPTIVE
Adapts to multiple use cases and devices

COHERENT
Provides one fluid, intuitive experience

SIMPLE
Includes only what is necessary

DELIGHTFUL
Makes an emotional connection
SAP Fiori – from Principles to Design to Technology
Fiori is a comprehensive design vision & toolset for Enterprise Apps

Principles

Design

Visual Design
Information Architecture
Interaction Patterns

Fiori Style Guide (Web, iOS)
Fiori Qualities
Prototyping Resources and SAP BUILD

Technology

User Interface
Business Logic

SAPUI5 SDK (Open Source OPENU5, Fiori for iOS SDK)
ABAP Programming Model for SAP Fiori
SAP HANA Core Data Services Reference

Fiori for S/4HANA Community
Fiori on S/4HANA wiki
Fiori 2.0 User Experience on Device
My Insights and Actions tailored to My Role and My Device

Tailored to My Needs
What I need when and wherever I need it

More information:
Fiori 2.0 Welcome Pack
SAP Fiori Client
SAP Mobile Secure*

*Optional, Licensing implications
Fiori Launchpad is the Entry Point to the User’s Daily Business
Everything I need in one place

Watch the Demo Video – Launchpad Basics
Watch the Demo Video – Advanced Features
SAP Fiori Launchpad Home Page

Features at a Glance

- Dynamic charts to provide high level, real-time overview
- Anchor navigation allows direct access to groups
- Color coding alerts user for any overdue, new or immediate actions
- Link lists provide access to a large number of apps
- Group tiles for personalized content organization
- Search across and within apps to get immediate answers
- News and feeds to enhance collaboration
- Launch SAPUI5, Web Dynpro ABAP*, SAP GUI for HTML* and arbitrary URLs
- Edit mode for instant personalization of groups and tiles

Fiori Launchpad User Guide

*on selected devices
Fiori Search – Rapid access to any Business Object or App

Search on partial information
See all matching results automatically categorized by Business Object and App

Launch to related apps directly from Search results

Easy Filter
By business object specific characteristics, e.g. company, tax category
User Assistance – Context sensitive help when you need it

Let's users get started quickly and stay up-to-date easily.

User assistance is part of the attractive, simple, and enjoyable user experience.

- **Instant**: exactly when the user needs it
- **Context-sensitive**: exactly what is needed
- **Seamless**: within the target application
- **Productivity**: interactive user guidance

Web Assistant Guide
Navigating from Launchpad to Apps
Options for the casual or expert user

SINGLE ENTRY POINT
- SAP Fiori Launchpad is the single entry point to access all apps

DOMAIN-SPECIFIC INFORMATION AND ACTIONS
Overview Pages (optional)

ENTER DETAILS & EXPLORE IN DEPTH
Fiori Apps, Classic Apps

Introducing the Fiori Overview Page
Supported App Types in S/4HANA
Fiori Apps Library holds all delivered Fiori Launchpad Reference Content

Delivered with S/4HANA
Fiori Apps
Classic Apps

Optional integration with other web content
Cloud Apps
Other Web Apps
SAP Cloud Platform Apps
Partner Apps
Custom Apps

More information: Leading S/4HANA UX – Role-based for App Discovery and Activation
S/4HANA Apps work together for Insight to Action
Contextual Insights at decision point & Seamless Navigation App to App

Example: Procurement – Material Order Entry

Review Material Shortage

Enter Material Order

Analytics and Insights

Check Budget Overview

Check Average Supplier Delivery Performance

Select Supplier

Choose best supplier and complete material order entry

Now All On One Screen

Watch a demo:

Real Time MRP Insights
Post General Journal Entries
Sales Order Fulfillment

✓ Faster customer delivery
✓ Larger average deal size
✓ Fewer warehouse stock outs

Purchase Manager

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Purchase Manager
More than 100 Sample Business Roles in S/4HANA 1610
500+ Fiori Apps (& related Classic Apps) assigned to sample roles
Enterprise Architect – Role Overview

Critical Activities of the Enterprise Architect

Optional Activities of the Enterprise Architect

Connections between the Enterprise Architect and other S/4HANA Project Roles
The Enterprise Architect supports your Digital Transformation Goals

Reuse what you want to retain on Your Path to S/4HANA

- New Implementation
- System Conversion
- Landscape Transformation

SAP Best Practices
Guided Configuration
Methodology

Reimagine/Renew/Transform User Experience and integration to support Your S/4HANA Use Cases

Efficient Procurement
Shopping Experience
Automation
System of Intelligence
Agility (Integration / HCP)
Business

Optimized Portfolio & Project Mgmt.
Management of Strategic Initiatives

Automated
System of Intelligence
Agility (Integration / HCP)
Business Network

Real Time Inventory Management
Physical Inventory Count

Automation
System of Intelligence
Agility (Integration / HCP)
Business Network
Enterprise Architect takes responsibility for the end-to-end user experience

Just as the…
UX expert considers the end to end user experience, the enterprise architect considers the end to end architecture and integration requirements

The Enterprise Architect….
The overall IT strategy, architecture and integration requirements
Critical Activities for the Enterprise Architect

Leading S/4HANA UX – Critical Enterprise Architecture Activities in S/4HANA Projects

Communicate Company’s Strategic IT Architecture which is Aligned with their Business Goals
… Confirm and discuss use cases and business roles during adaption of UX innovation

Ensure Overall IT Architecture and UX Strategy are Aligned
… Make sure overall IT architecture and UX strategy are not contradicting each other and are executed in aligned manner company-wide

Evaluate Integration Points and Technical Feasibility
… Analyze and ensure technical feasibility for all required app and device types (e.g. device OS, web browsers, container apps)

Work Closely with UX Lead, Business Experts and Basis Team
… Ensure alignment and IT execution in accordance with overall strategy
Optional Activities for the Enterprise Architect
Based on Project Scope and Identified UX Gaps

Get Involved in More Detail About UX Strategic Decisions
Support the UX Lead in evaluating and choosing the best way forward, regarding for example Advanced Security topics, Mobile Device Management considerations

Support More Detailed Integration Design in UX Space with Basis
Provide expert knowledge around integration and technologies / standards used, for example regarding integration of Cloud and other non-SAP apps
Enterprise Architect Role and Management Experts

**Enterprise Architect and the Project Manager**
- Confirm alignment between UX decisions / Fiori high-level design and overall IT architecture
- Confirm organizational change management expectations and priorities
- Clarify integration activities, effort and tasks in scope
- Act as the central point of contact for all integration and overall IT strategy issues

**Enterprise Architect and Organizational Change Managers**
- Provide organizational change management options from integration point of view
- Advise which technical products, components and teams have to be involved to achieve the organizational change
Enterprise Architect Role and UX Lead / Basis Expert

Enterprise Architect and the UX Lead

- Discuss architectural needs and considerations for UX current and future roadmap
- Discuss expectations towards UX for achieving strategic IT goals and future roadmap
- Confirm architecture is fit for purpose for UX needs

Enterprise Architect and the Basis Expert

- Advise Basis which integration requirements to consider for UX requirements
- Ensure Basis will perform fit for purpose technical testing activities (on multiple device types, for example)
- Help with bringing in experts as required for resolution of integration issues
- Ensure basis will set the system up with all up-to-date security configurations
Enterprise Architect Role and Functional Experts

Enterprise Architect and the Functional Application Expert

- Provide support to functional experts for technical and integration topics
- Assist in troubleshooting technical overall issues with the behaviour of Fiori and Classic Apps
- Support design process for UX extensions and new apps identified during Fit-Gap analysis with required technical architecture input in alignment with business requirements
- Ensure devices will be supported as per overall architecture goals
- Provide guidance on extensibility and new app options
- Provide technical support for security and integration issues

Enterprise Architect and the Analytical Expert

- Discuss needs and options for analytics to support overall business goals and future roadmap
- Ensure future-proof analytics design (CDS usage, etc.)
- Discuss device considerations for analytics
The Enterprise Architect Role and the S/4HANA Project Team

From Sponsors: Understands Digital Transformation Goals the Company

With Stakeholders: Ensures compliance of architecture goals with UX vision and technical possibilities

Ensures all UX in scope is working as per overall integration and security requirements

With UX Lead: Confirms UX decisions are aligned with overall company’s business and IT goals

With Administrators: Guides correct decisions from architecture view

With Developers: Guides technology choices for configuration & development

Provides advisory for UX team for all technical and integration architecture requirements

For Functional Application Experts: Provides clarifications for integration and security

Collaborates with Org Change Mgt to align all teams involved for overall testing requirements

With Stakeholders: Ensures compliance of architecture goals with UX vision and technical possibilities
Enterprise Architect – Getting Started

How to get an Understanding of Architecture with S/4HANA and Fiori
First Steps in Understanding S/4HANA and Fiori Architecture

Understanding Fiori Deployment Options
Refer to Landscape Deployment Recommendations for Fiori Frontend Server (Hub mode)
Confirm which deployment option to choose for the enterprise

Understand Technology Behing Fiori and Integration Options
Understand the Fiori Paradigm
Understand HTML5, SAPUI5 and OData

Ensure Integration and Security Requirements
Verify integration and security requirements with other existing IT products existing in the enterprise

More information:
Landscape Deployment Recommendations for SAP Fiori Front End-Server
SAP EA Explorer Landscape Deployment Recommendations for Fiori Frontend Server, Landscape Scenario IV (FES and S/4HANA)
Leading S/4HANA UX – Getting the Good Guides
SAP Fiori UX – SAP S/4HANA – Architecture Deep Dive
Understand the S/4HANA Principle of One Fiori Archetype
Archetype informs Activation, Adaptation, Extension, & Custom Build

SAP Fiori
is a collection of apps with a simple and easy-to-use experience for broadly used SAP software functions that work seamlessly across devices – desktop, tablet, and smartphone.

OData (Open Data Protocol)
is an OASIS standard that defines the best practice for building and consuming RESTful APIs.

CDS (Core Data Services)
CDS is an enhancement of SQL which provides a data definition language (DDL) for defining semantically rich database tables/views (CDS entities) in the database. The enhancements include annotations, associations, and expressions.
Reverse proxy to redirect URLs to the appropriate service

Fiori Launchpad | Fiori Apps
+
OData Service Model

OData Service Implementation
+
Application Logic (Classic Apps) | Core Data Services (Fiori Apps)

Database
Gather Configuration Details of Apps
Fiori Apps Library holds all delivered Fiori Launchpad Reference Content

**Step 1**
Visit the Fiori Apps Library
https://fioriappslibrary.hana.ondemand.com/sap/fix/externalViewer
and filter By Roles

**Step 2**
Select and Aggregate Apps in scope

**Step 3**
Confirm S/4HANA version and download the configuration details

Leading S/4HANA UX – Role-based for App Discovery and Activation
# Understanding Activation of Fiori Apps and Classic Apps in Scope

Mass Activate Apps using Task List Configuration or App Activation Tool

## S/4HANA Architecture

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Dispatcher</td>
<td></td>
</tr>
<tr>
<td>Fiori Frontend Server</td>
<td></td>
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</tbody>
</table>

## Fiori Launchpad

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Dispatcher</td>
<td></td>
</tr>
<tr>
<td>ICF Node</td>
<td></td>
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<tr>
<td>OData Service</td>
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</tbody>
</table>

## Fiori Apps

<table>
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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Web Dispatcher</td>
<td></td>
</tr>
<tr>
<td>OData Service</td>
<td></td>
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<tr>
<td>OData Service Implementation</td>
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</table>

## Fiori Search

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Dispatcher</td>
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</table>

## Classical Apps

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Dispatcher</td>
<td></td>
</tr>
<tr>
<td>WebDynpro ABAP ICF Node</td>
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</tbody>
</table>

## Classical Apps SAPGUI for HTML

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Dispatcher</td>
<td></td>
</tr>
<tr>
<td>SAPGUI for HTML</td>
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Once for all Transactions

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Container apps provide improvements & new opportunities

Performance

Security

Grants access to selected native Device capabilities (e.g. camera, barcode reader, push notifications)

Note: Extended scenarios possible via SAP Cloud Platform, mobile service and Fiori for iOS SDK

Delivered container apps

SAP Fiori Client*

SAP Mobile Secure**

* Free download via Apple App Store, Google Play Store, Microsoft Store

** Licensing required

SAP Fiori Mobile App
Are based on “classical” ABAP concepts PFCG / SU01 / SU22, but several topics impact authorization handling:

Role-based apps
- Classical feature-rich applications served different users and roles
- Paradigm shift: Fiori-apps are targeted for the scope of a specific role

SOA-approach
- Backend system only knows OData services
- Assigning apps to users means assigning the service and its authorizations in the backend

Apps bundled in Fiori catalogs and displayed in Fiori Launchpad
- Fiori UI entities defined and assigned on frontend server
- Only relevant tasks and activities are assigned to the end user

More information:
S/4HANA Security Guide 1610 FPS01
SAP Gateway Security Guide
S/4HANA Authorizations – impact of Fiori
Authorizations derived from UI assignments

Guiding principle: Authorizations derived from UI assignments

- Fiori catalog bundles role-based Fiori apps, HTMLGUI transactions and WebDynpro applications needed for a certain task
- If a user is assigned to a catalog, he/she shall get corresponding authorizations
- Automated determination of authorizations required for the catalog
  → Fiori catalogs as central object for structuring the authorization maintenance

Advantages

- Transparency – admins sees what the user gets
- Automation + lifecycle support based on catalogs
S/4HANA Authorizations – impact of Fiori
Fiori-PFCG integration for S/4HANA on-premise

Approach for S/4HANA on-premise

• **Content / business admin** defines the catalogs in Fiori Designer
  
• **Role admin** adds the catalogs to PFCG role menu to determine:
  
  – On Frontend Server: UI assignment and OData start authorizations (IWSG)
  
  – On Backend: OData start authorizations (IWSV) + instance-based authorizations (via SU22)

• Other steps for role definition (e.g. organizational values) unchanged

Goals

• E2E Fiori UI content and authorization handling

• Protect Suite customer investments → non-disruptive regarding process and content

• Enables role lifecycle management → if content admin changes the catalogs, role admin can determine roles to be changed

More information:
Configuring Authorization Roles NW 7.51
Enterprise Architect – Advanced

Extending S/4HANA UX in the Explore and Realize Phases
S/4HANA Extensibility Spectrum
User Experience extensions are an integral part of the broader spectrum.
Understand UX Design to UI Technology - Example Decision Path
Use as-is, Adapt, Extend, or Build

1. **SAP Fiori App available?**
   - Perfect fit?
     - Use out of the box
     - Key User Adaptation enough?
       - Adapt UI with Key User Tools
       - Extend with SAP Web IDE
     - BYO with SAP Web IDE
       - Mobile necessary?
         - Perfect fit?
           - Use out of the box
           - Adapt with SAP Screen Personas
         - Classic App available?
           - BYO with SAP Web IDE

BYO = Build your own Custom Fiori App

= SAP Web IDE
= SAPUI5
= SAP Screen Personas 3.0 SP4 minimum

*SAP Fiori for iOS as additional option for dedicated use cases; 2 For WDA apps also Floorplan Manager

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SAP Screen Personas allows companies to improve user productivity by personalizing their SAP ERP screens.

Simplify complex SAPGUI for HTML or Web Dynpro ABAP apps
- Create SAP Fiori designs for custom or standard transactions, including SAP S/4HANA
- Streamline business processes by providing only the essential screen elements and data to complete transactions faster and more accurately through fewer data entry fields and reduced scrolling
- Automate repetitive tasks and simplify complex screens through pre-filled fields and pull-down menus, which help the user save time on data entry

Improve business user productivity
- Increase SAP adoption by making screens easier to use
- Decrease training time for SAP users with intuitive screens
- Enhance user satisfaction
- Reduce the cost of personalization compared to custom coding
Overview of the Extensibility Capabilities of SAP S/4HANA UX
Extensibility Options for Fiori Apps and advanced UX

In-app extensibility: Context-aware extensions, focus on tight integration

Key User Extensibility
- Custom fields and tables, analytics and forms
- Change or add business rules and business logic (cloud ABAP Web editor)
- UI flexibility

Classic Extensibility
- Full access to ABAP, keep existing extensions

Side-by-side extensibility with SAP HANA Cloud Platform:
Learn from the outside, weave external content into your solutions

Extensibility based on SAP HANA Cloud Platform
- Custom Fiori UIs, UI extension scenarios
- Integrate with other cloud solutions (for example, from SuccessFactors and Ariba, both SAP companies) and third-party solutions
- Completely new solutions
  - Typical: self-contained applications, loosely coupled to S/4, reaching out to customers-of-customers
  - Take advantage of application and database services for SAP HANA Cloud Platform (cloud portal, mobile documents, output management, ...)
  - Use a full-fledged development platform Java, SAP HANA native development, WebIDE

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SAP S/4HANA Extensibility
Roles & Needs

Business User
- Change order of columns in a table
- Hide tabs
- Change format of dates/numbers
- Hide few apps on Launchpad
- My changes should not affect other people

Business Expert, Implementation Consultant
- Add/change business rules/logic
- Add custom fields, tables, reports, forms
- Change layout
- Perform simple changes in an easy way
- My changes should affect people in my LOB/company

Developer
- Add/change complex business logic
- De-couple software lifecycle of standard and extensions
- My changes should affect people in my company

Personalization
Key User Extensibility
Managed / Classic Extensibility
SAP S/4HANA Extensibility Options for Fiori Apps
Extend or Build the choice is yours

Extension points in delivered Fiori Apps
Start with Key User extensions
Add Developer Extensions where needed

Build your own Custom Fiori Apps where needed
High business value use cases
Compose/Decompose from Classic Apps to Fiori Apps where not yet delivered
Adapting S/4HANA Fiori Apps with Key User Extensibility Apps

Fiori Apps that adapt other Fiori Apps

UI Adaptation Mode

Report Adaptation

Forms Designer

E-Mail Template Designer

Maintain Custom Fields

Maintain Custom Logic

OData Service

Application

Database Table

The Key User Extensibility Tools of S/4HANA

Watch the Video – Adapting the UI of Fiori Apps at Runtime
Embedding Analytics in S/4HANA Fiori Apps
Tailored to the Digital Transformational Goal and Use Case

- New working models combine different app types and demonstrate the value of SAP S/4HANA
- Combining real-time insights with analytics and transactional follow-up activities to allow better and faster decisions as well as instant execution
- Scenario-specific content (KPI definition, roles,...) and drilldown applications/reports. All KPIs are based on the same KPI repository and services

SAP Fiori Launchpad

Performance-Driven Working Model
Smart Business Drilldown
Analysis Path Framework
Analysis in SAP BusinessObjects
SAP S/4HANA Standard Analysis

Situation-Driven Working Model
SAP HANA Search, C'est Bon, Fact Sheet

Task-Driven Working Model

Analyze in SAP BI
Collaborate
Execute Transactions

and

SAP Digital Boardroom**
** and related architecture
(SAP BusinessObjects Cloud*)

* Connection to SAP S/4HANA VDM planned
** Templates for SAP S/4HANA

Fiori 2.0 - A primer on Embedded Analytics

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Build Your Own S/4HANA Fiori Apps - with full flexibility
SAP UI development toolkit for HTML5 (SAPUI5)

SAPUI5 is a JavaScript-based UI library designed to build cross-platform business applications.
Extending the Mobile User Experience

**Hybrid**
- SAP Fiori, SAP UI5, or HTML5
- Consistent user experience across devices
- Hybrid SDK based on Apache Cordova

**Native**
- SAP HCP SDK for iOS
- SDK’s for Android, Windows
- New Native Fiori Design Language
- Optimal user experience

**Mobilized Content**
- Simple mobile access to enterprise data without writing code
- Familiar “Card” user experience
- Contextual linking to source apps

**Beyond Apps**
- Enterprise Virtual Private Assistant (VPA)
- Conversational UI
- Business context awareness
- Learns and recommends

*This is the current state of planning and may be changed by SAP at any time.*
Thank you

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