Streamlining R&D with SAP Recipe Development

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Linx/AS

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- **Introduction**

What We Do

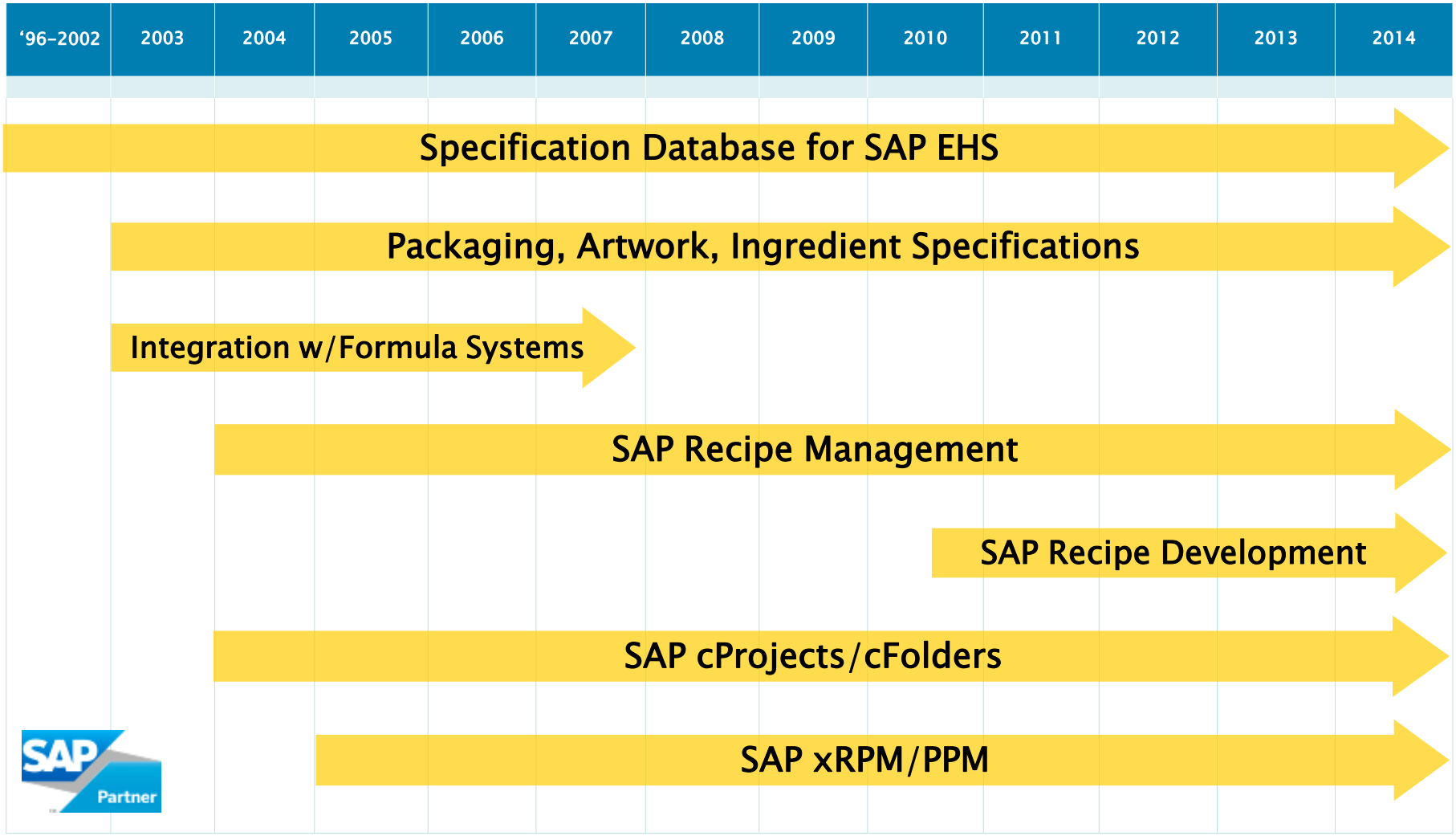
At Linx/AS, we help customers get the most out of their investment in the SAP platform.

Our success lies in fully understanding the people and processes that drive your business. Only then can we apply our in-depth technical knowledge to design and deliver the right solution.

From streamlining product development to improving corporate sustainability to giving your users access to SAP when, where, and how they want it—we make SAP run like you've never seen.

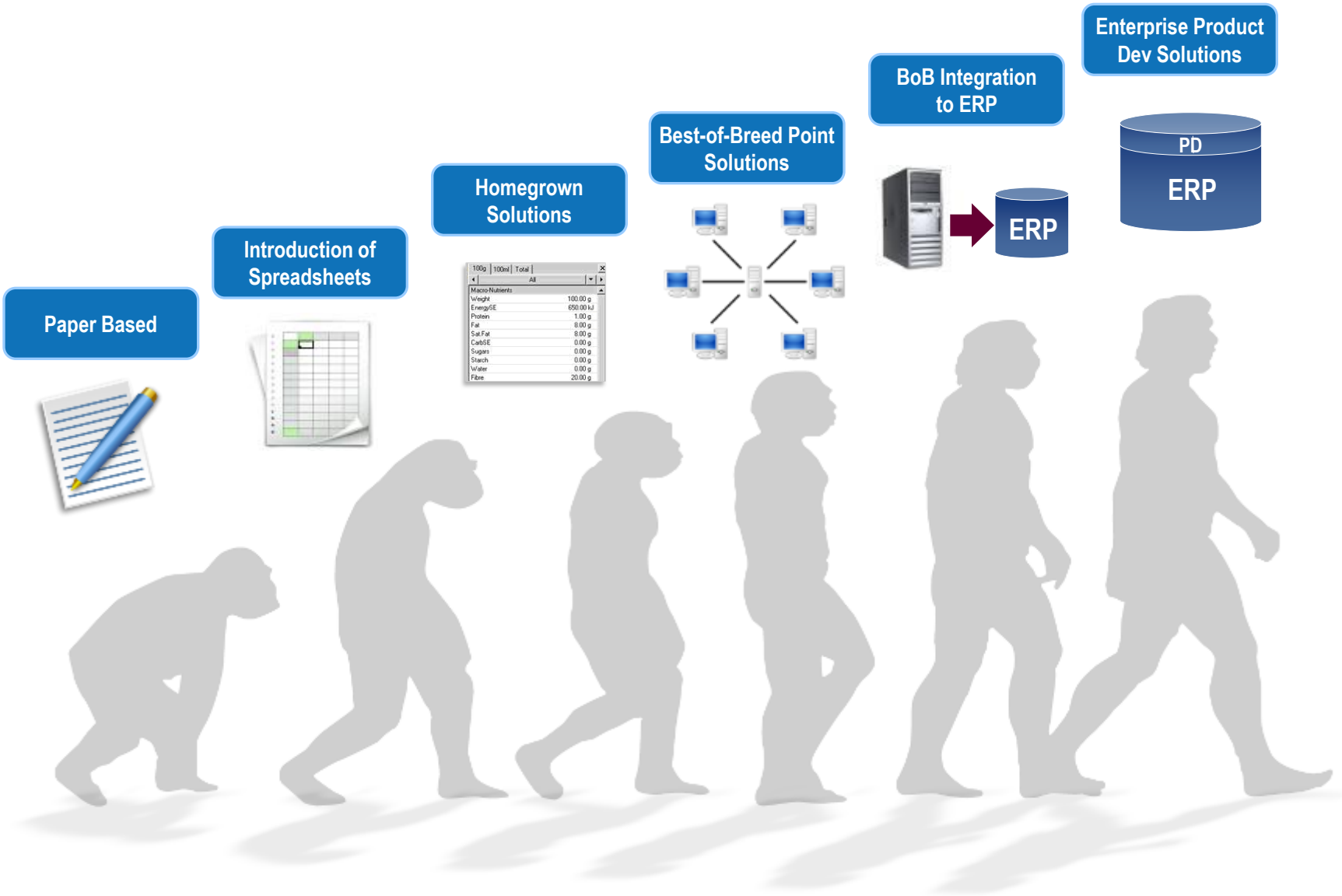
- **SAP Consulting for Product Lifecycle Management (PLM)**
- **SAP Consulting for Environment, Health & Safety Management (EHSM)**
- **SAP User Experience (UEx) Consulting**
- **Software Innovations**

Over 15 years working with customers to implement, develop and enhance the PLM capabilities of SAP.



- **Business Drivers & Benefits**

The Evolution of Process PLM Technology (in Theory)



The Evolution of Process PLM Technology (in reality)

Across industries and even within companies, a great variance in the maturity of product development technology still exists.

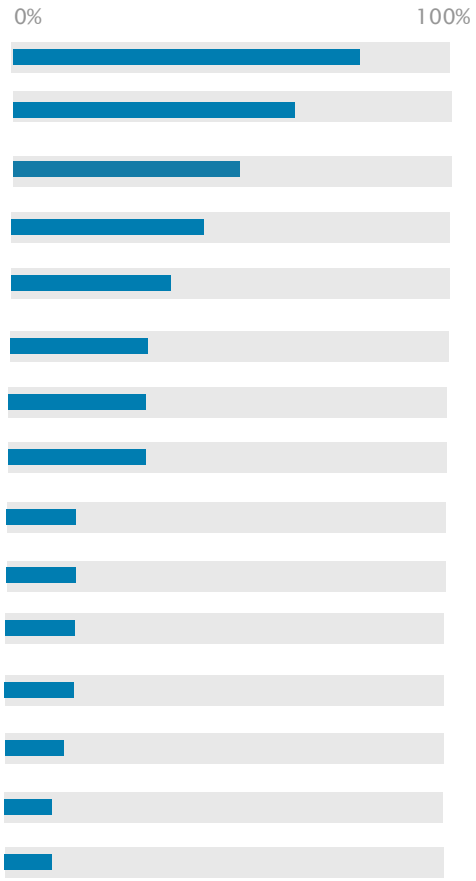
However, the trend is steadily moving toward enterprise functionality.

Realization setting in that:

- TCO of homegrown solutions is too high and regulations/requirements grow faster than what internal development can keep up with.
- TCO of best-of-breed solutions always turns out to be much higher than initial estimates.
- Best-of-breed systems do not scale well for large global organizations.
- Best-of-breed system integration with ERP inevitably more complex and expensive to design, build and maintain
- A single version of the truth for product data tied into ERP provides swifter speed to market and a greater level of traceability/compliance control.
- Enterprise product development provides a more efficient alignment with manufacturing.
- Collaboration with suppliers, contract manufacturers, co-developers and other external roles in product & packaging development is increasing and requires a robust integrated platform.

What Drives PLM Initiatives

Benefit	% Improvement
Reduction in Search Time for Data	80%
Reduction in Number of Design Changes	65%
Better Understanding of Requirements	50%
Shortened Planning Process	40%
More Optimized Material Flow	35%
Reduction in Time to Market	30%
Savings due to Improved Labor Utilization	30%
Savings in Tool Design	30%
More Quickly Identify Areas for Improvement	15%
Improved Validation of Processes	15%
Increase in Collaboration/Communication	15%
Increase in Production Throughput	15%
Overall Reduction in Product Cost	13%
Decrease in Product Design Time	10%
Reduction in Inventory	10%



**source CIMDATA*

SAP Recipe Development Overview

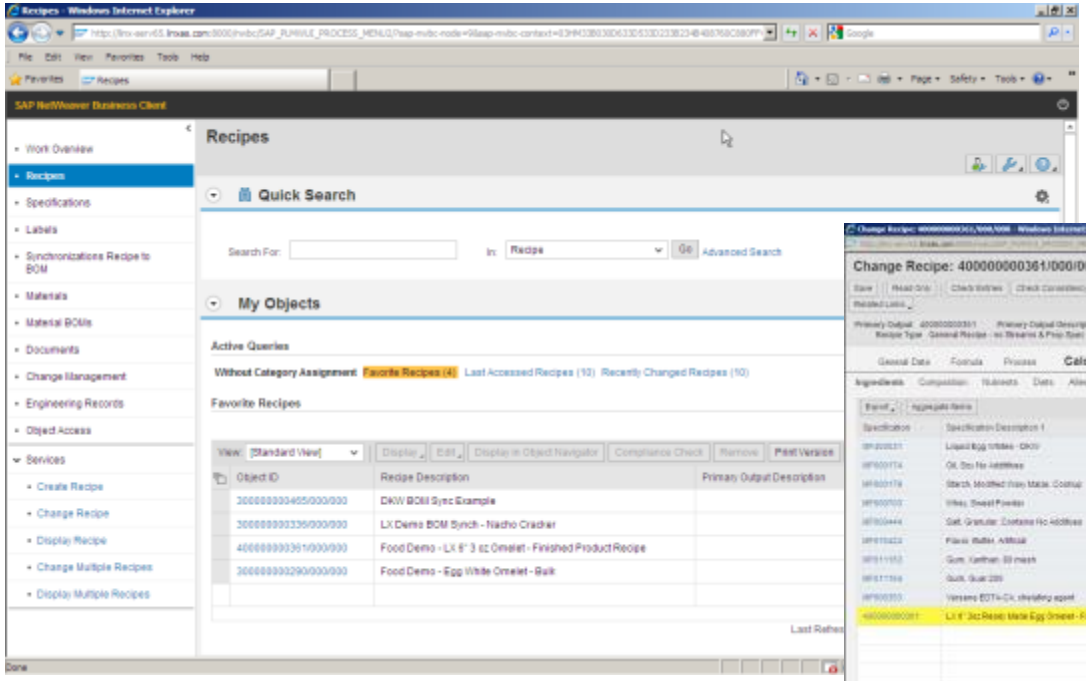
SAP Recipe Development Overview

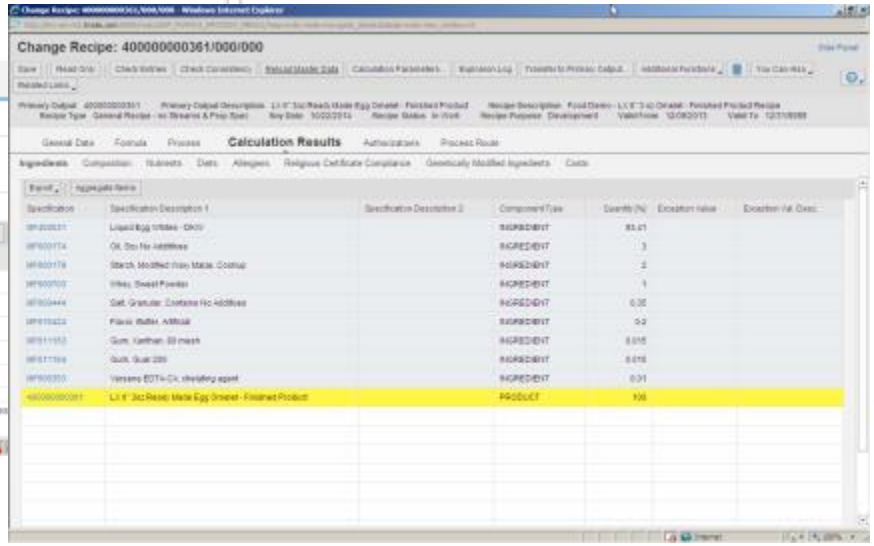
- SAP RD drives the development and eventual commercialization of new products.
- Manages all aspects of product development from formulation and process instructions to compliance checking and packaging specifications.
- Requirements and design will vary widely by industry with typical applications in food, beverage, fragrances, flavors, chemical/specialty chemicals, and pharmaceuticals industries.

RD Development History

- Over the past 5 years, SAP AG has invested significant effort and money into the redevelopment of SAP capabilities for supporting R&D processes
- In 2011, SAP released its first version of SAP RD with its Enhancement Pack 5 (EhP5). Early adopters were primarily in the food industry
- SAP RD on EhP6 and EhP7 added a number of significant improvements to the first release and is now a mature and proven solution
- Key improvement areas – usability, stability/performance, new functionality
- Recipe Management will still be available and will co-exist with RD. However SAP will no longer provide functionality enhancements – only bug fixes
- Anticipate delays in **response time for RM fixes and increase in maintenance expense as expertise for the solution decreases.**

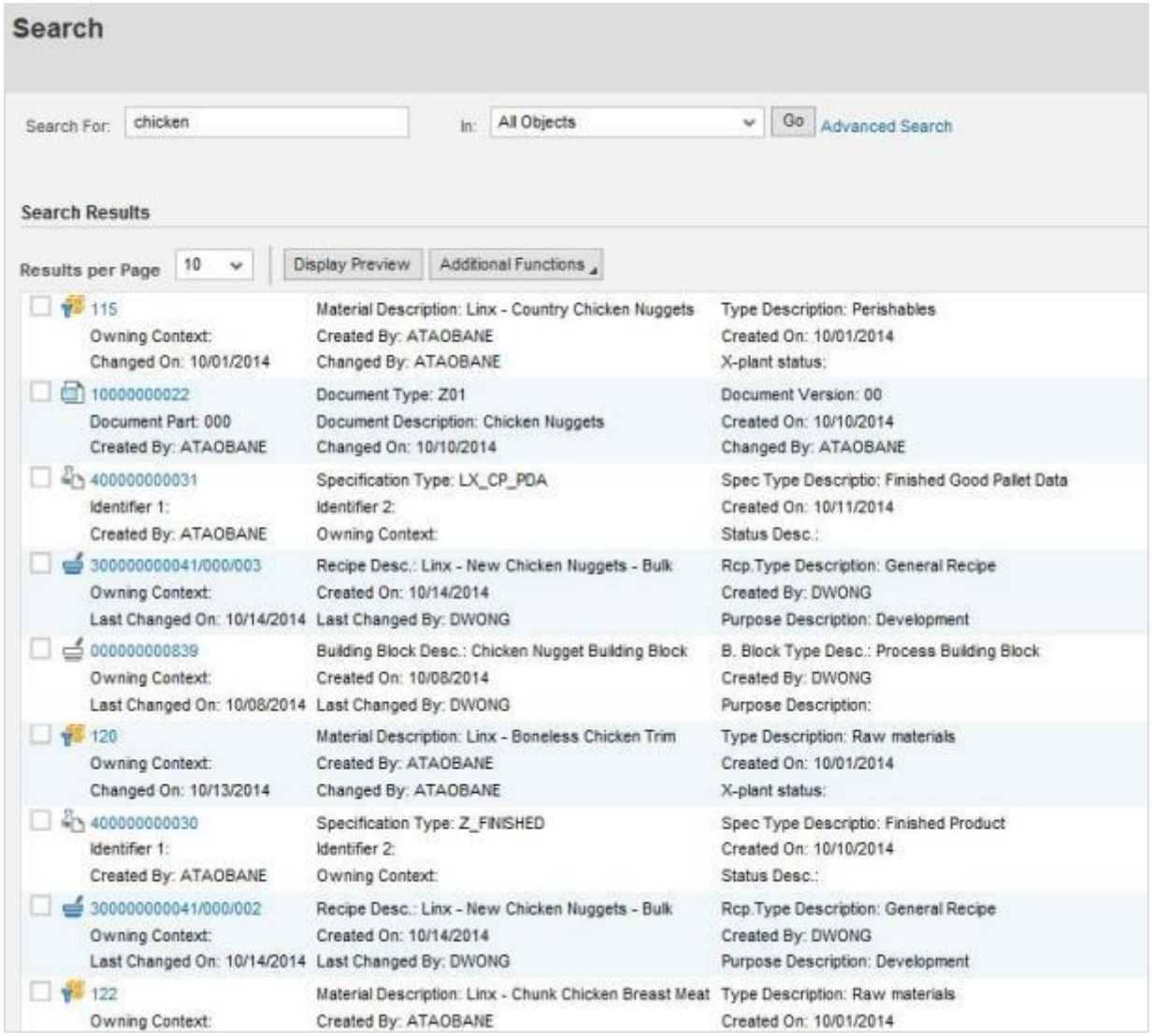
Enhanced User Experience





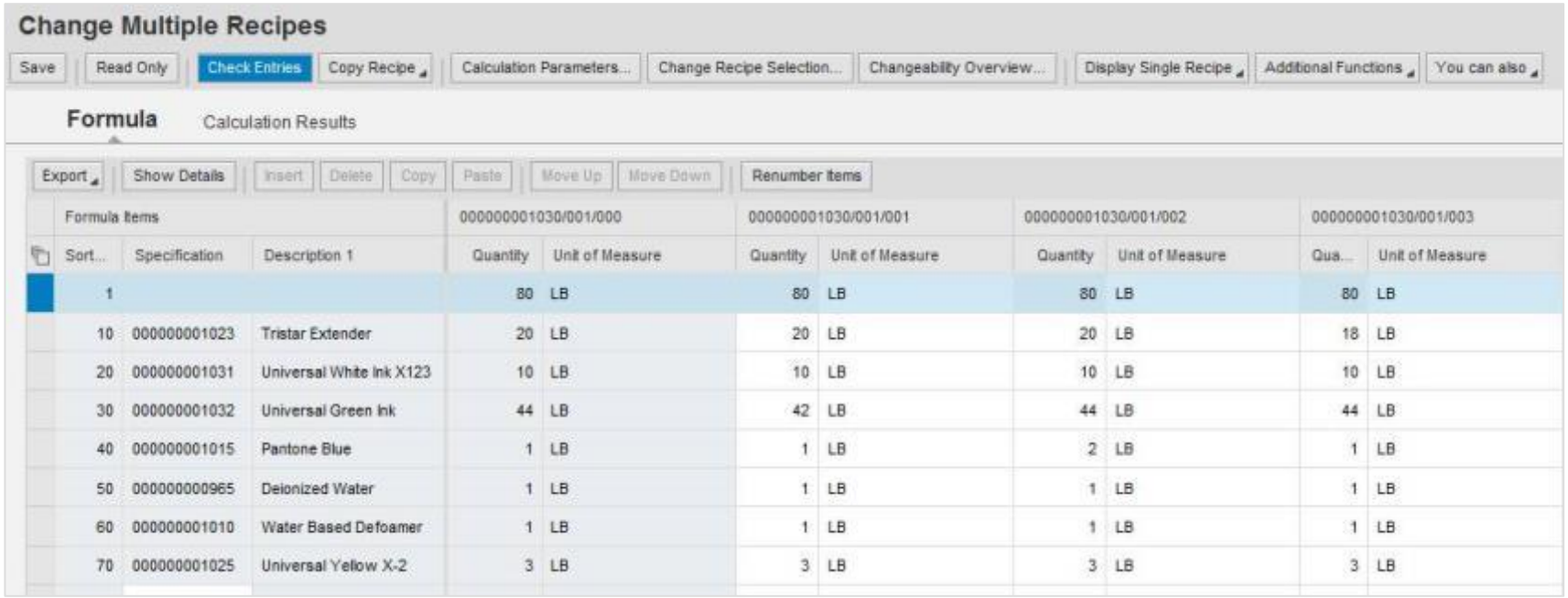
- Significant improvements on user interface
  - Web based, flexible and more user intuitive
- No transaction codes (i.e. no RMWB)
- Consistent organization of screens and navigation
  - Customizable
  - Maintains history/favorites
- Easier access to view detailed data without having to navigate out of recipe

Easy, Robust Search



- Primary search engine has changed—Enterprise Search (TREX)
- Cross-object search capability
- Fuzzy search capability
- Real-time suggestions: field-level search as text is entered (Context Sensitive Searching)
- Object Navigator – Where Used

Working with Recipes Is Easier



Change Multiple Recipes

Save | Read Only | Check Entries | Copy Recipe | Calculation Parameters... | Change Recipe Selection... | Changeability Overview... | Display Single Recipe | Additional Functions | You can also

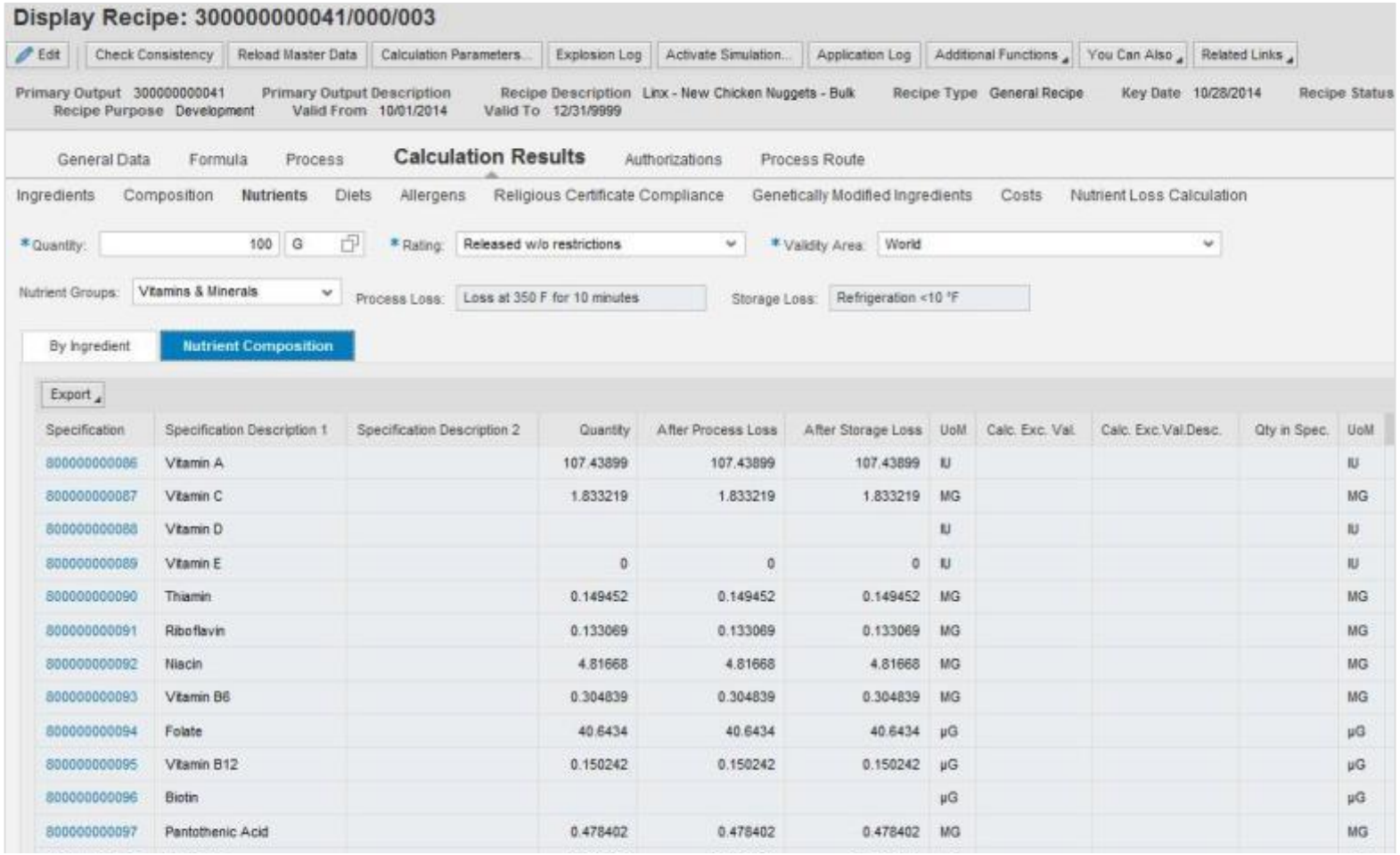
Formula | Calculation Results

Export | Show Details | Insert | Delete | Copy | Paste | Move Up | Move Down | Renumber Items

Formula Items			000000001030/001/000		000000001030/001/001		000000001030/001/002		000000001030/001/003	
Sort...	Specification	Description 1	Quantity	Unit of Measure	Quantity	Unit of Measure	Quantity	Unit of Measure	Qua...	Unit of Measure
1			80	LB	80	LB	80	LB	80	LB
10	000000001023	Tristar Extender	20	LB	20	LB	20	LB	18	LB
20	000000001031	Universal White Ink X123	10	LB	10	LB	10	LB	10	LB
30	000000001032	Universal Green Ink	44	LB	42	LB	44	LB	44	LB
40	000000001015	Pantone Blue	1	LB	1	LB	2	LB	1	LB
50	000000000965	Deionized Water	1	LB	1	LB	1	LB	1	LB
60	000000001010	Water Based Defoamer	1	LB	1	LB	1	LB	1	LB
70	000000001025	Universal Yellow X-2	3	LB	3	LB	3	LB	3	LB

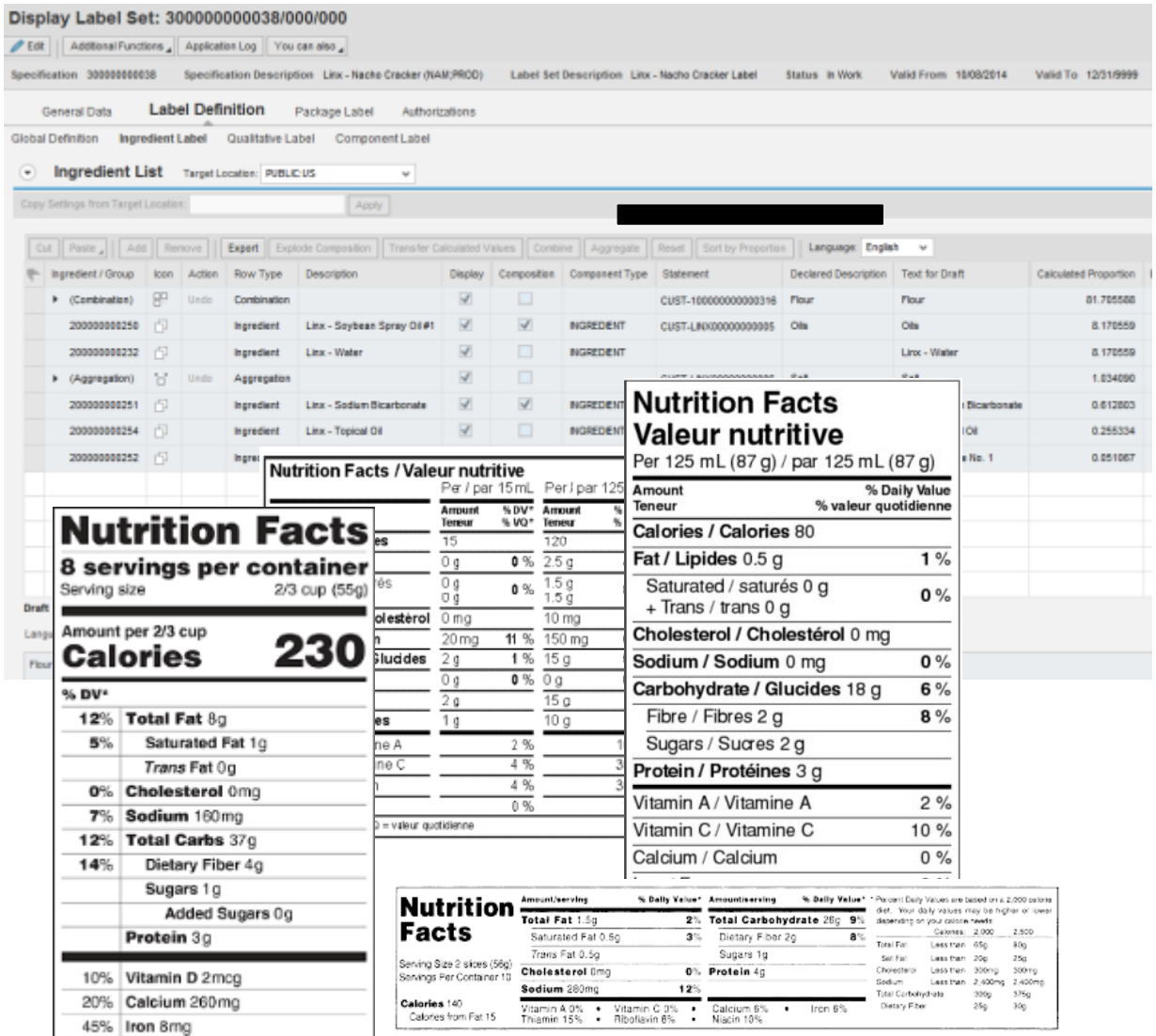
- Recipe numbering based on the Specification number, no longer a separate unique numbering
- Copying from existing recipe is more intuitive and simpler
- Have ability to create many versions of the same recipe quickly
- Multi-formula editor/comparison
- Mass change capability

Recipe Calculation Enhancements



- Similar calculations for costs, ingredient & composition breakdown
- Can apply scrap % to product or components
- Scaling of input/output quantity
- Custom calculations can be inserted
- Improved formula optimization/data modeling

SAP Recipe Development Labeling



- RD Labeling functionality allow the creation and management of the data sets needed to create product labels for each needed region/country
- Compliance checks on Recipe ensures accurate data on Master Label (Label Copy)
- Output label content used for graphic/label development
- Preview/Label Copy generated in PDF or WWI Documents

Data Integration in Product Packaging Artwork

XML from RD

```
  </RMSLS_XML_NUTRIENT_ITEMS>
- <RMSLS_XML_NUTRIENT_ITEMS>
    <POSNR>000000000020</POSNR>
    <NUTRIENT_INT>00000000000347</NUTRIENT_INT>
    <NUTRIENT_EXT>800000000063</NUTRIENT_EXT>
    <NUTRIENT_TXT>Calories</NUTRIENT_TXT>
    <FLG_SHOW_ITEM>X</FLG_SHOW_ITEM>
    <STM_OBJNO>000000000000</STM_OBJNO>
    <VALUE_CALC>465.0</VALUE_CALC>
    <DECIMALS>6</DECIMALS>
    <UNIT_CALC>KCA</UNIT_CALC>
    <UNIT_CALC_TXT>Kilo Cal</UNIT_CALC_TXT>
    <VALUE_DECL>0.0</VALUE_DECL>
    <DECIMALS_DECL>0</DECIMALS_DECL>
    <UNIT_DECL />
    <UNIT_DECL_TXT />
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    <STATMT_ID_EXT />
    <STATMT_ID_TXT />
    <RDA_PROFILE_VALUES />
    <STATEMENTS />
```
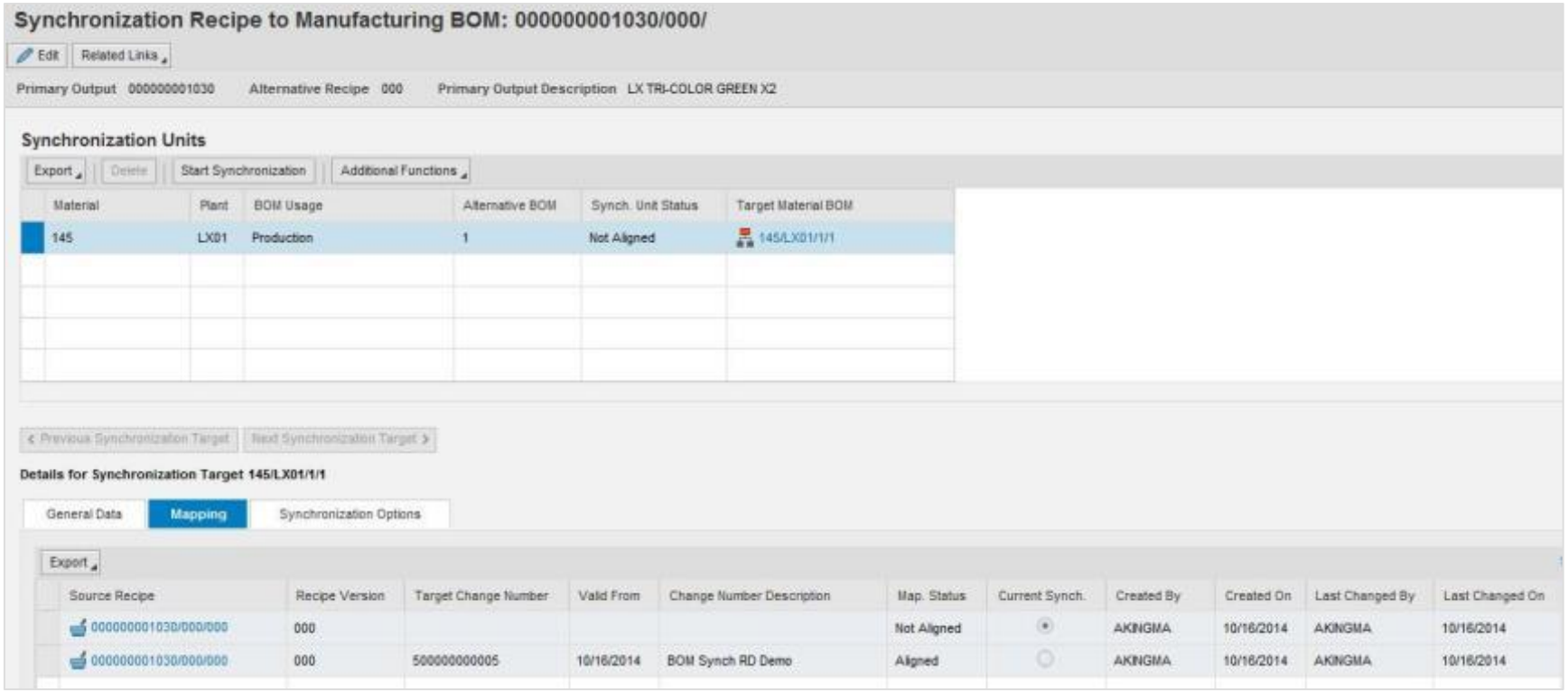

XML

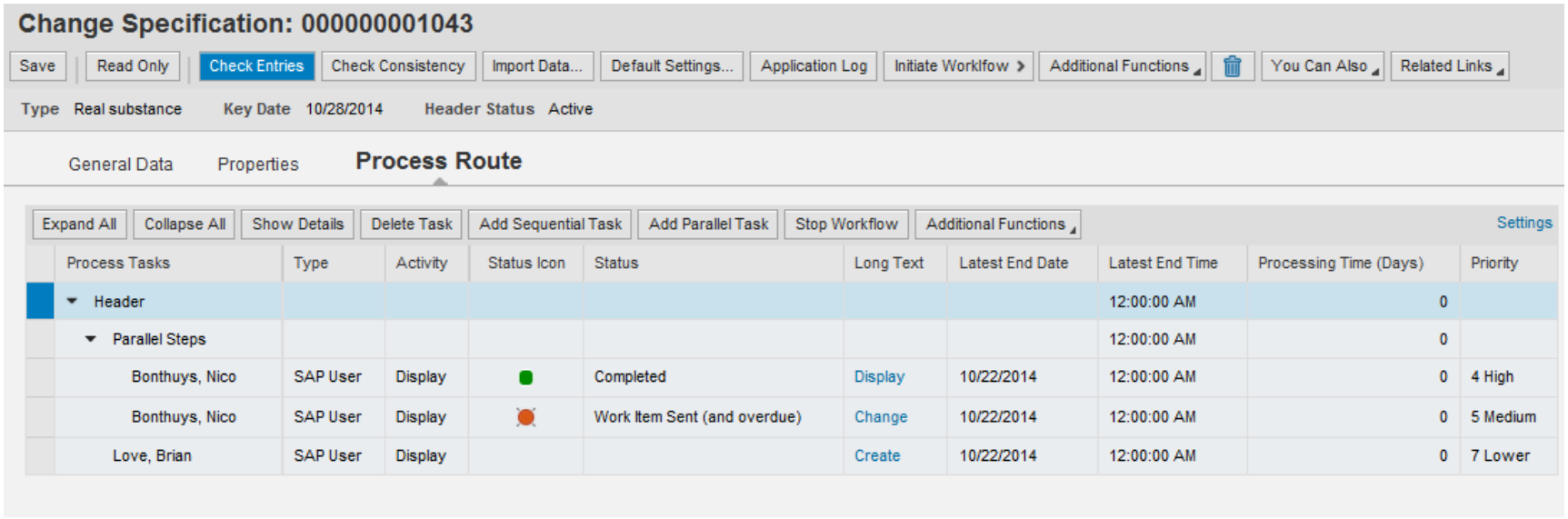
Label data exported from SAP RD Label as XML is used as input for packaging artwork file (e.g., Adobe Illustrator layout)

Product Structure Synchronization (PSS)



- Significantly improved manufacturing BOM creation and synchronization functionality with change masters (ECM)
- Ehp6 supports RD Recipe to logistics BOM synchronization
- EhP7 now also supports RD Recipe synchronization with logistics Master Recipes

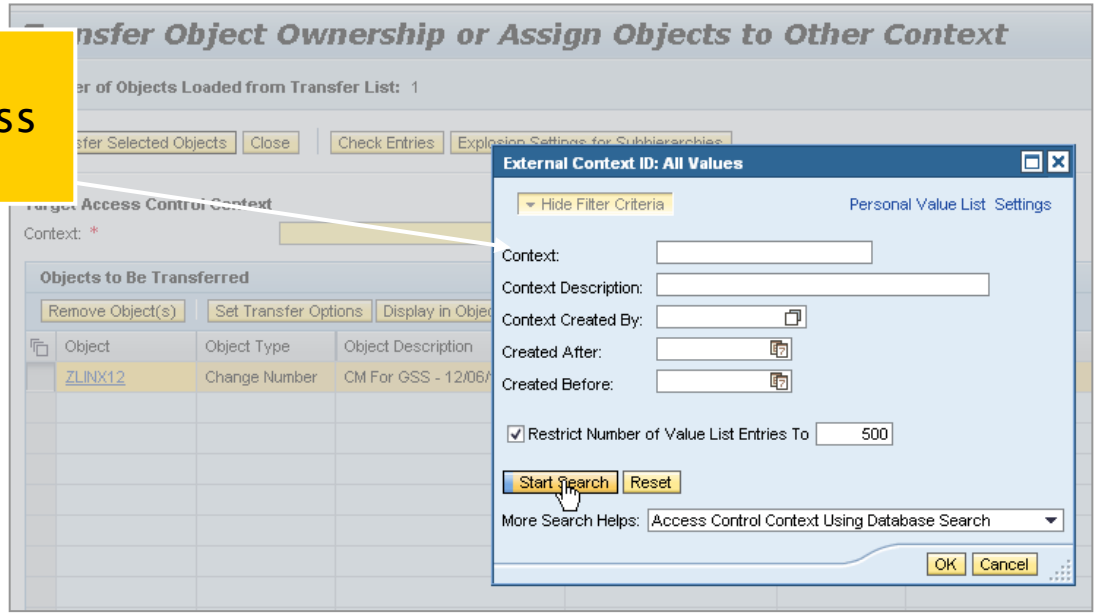
Workflow in RD: Process Routes



- Standard workflow in SAP PLM/Recipe Development is based on Process Routes
- Ad-hoc Notification system that allows routing of a recipe/specification from one person to another in series or parallel
- Process Routes not as sophisticated as native SAP Workflow Engine, but much easier to setup and execute

SAP Access Control Management

ACM/ACC lets external roles access PLM objects



- External roles (vendors/suppliers/contract manufacturers) playing a larger role in product data management.
- Access control management (ACM) via access control contexts (ACC) provides suppliers direct access to PLM objects (specifications, recipes, documents, etc.)
- Also used for internal segregation of PLM objects based on product line/customer

- **Transitioning from Recipe Management**

SAP RD addresses many of the challenges faced by users of RM

Challenge with RM	Benefit of SAP RD
No additional enhancements planned by SAP—platform obsolete and reached limits in terms of design platform.	• Establish a platform supported by SAP for future enhancements and development • Enable opportunities to participate in future functionality design decisions by SAP (RDAC)
Usability	• SAP RD makes significant improvements on usability • RD user interface much more acceptable in the 'world' of R&D, Engineering, QA, Regulatory
Weak in supporting early lifecycle development	• Improved usability and flexibility results in greater acceptance within R&D with simplified training • New features, such as multi-formula editor and object navigator, improve efficiencies
Keeping R&D recipes and manufacturing BOMs aligned	• SAP RD provides Product Structure Synchronization functionality to maintain alignment between recipes and BOMs and/or Master Recipes
Accessing data in RM for reports and downloads/exstract	• SAP RD provides support for data access via Excel downloads and WWI reporting
Label generation (ingredient lists, allergen classifications, nutrition, etc.) requires manual handover to separate system	• SAP RD improves upon RM labeling functionality • Data seamlessly flows from ingredients to recipes to label data generation
System performance of RM is poor	• Recipe structures in RD have been redesigned providing for improved performance • SAP RD on SAP HANA to further accelerate performance

Migration Approach

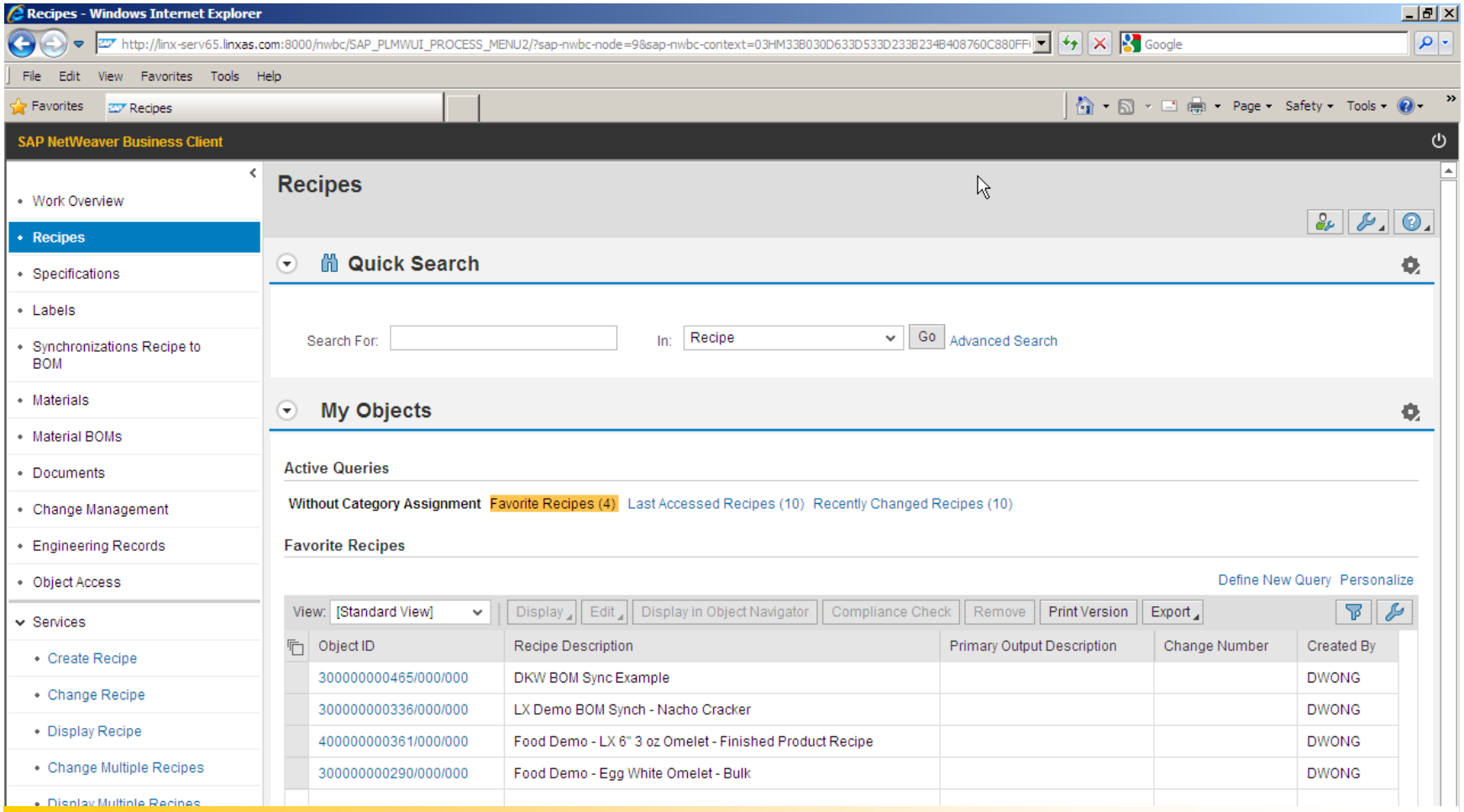
Timeframe will vary and will depend on the complexity of the existing PLM design. Key drivers that will impact the duration are:

- **How many custom WRICEF objects exist**
  - Are they known? Or will effort be required to collect definitive list?
  - Will standard RD replace the custom object?
  - For those objects remaining, how many will require modification to work in RD environment
- **Data**
  - How clean and consistent is the existing data?
- **New functionality**
  - What new functionality of SAP RD is in scope?
  - How much business process re-engineering is required?
- **Infrastructure**
  - What version of SAP is starting point for upgrade to EhP6/7?
  - Upgrade of existing PLM RM system or build new PLM7.X system and migrate data?
  - Implement 7.X on a HANA platform?

High-Level Guidelines on Transformation/Migration Effort

Scenario	Characteristics	Effort
1	• Standard RM • < 10 development objects • No complex development objects • Minimal process change • Clean data/minimal data restructuring required	3–4 months
2	• 10–20 development objects • <3 complex objects • Minimal process change • Data cleanliness is fair/minimal data restructuring required	4–6 months
3	• 20–50 development objects • < 10 complex objects • Medium level process change • Data cleanliness is poor/data restructuring required	6–8 months
4	• 50+ development objects • 10+ complex objects • Significant process change • Data cleanliness is poor/data restructuring required	8+ months

SAP RD DEMO



SYSTEM DEMO

- Q&A

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