

TARGET-DRIVEN RECIPE DEVELOPMENT

REFORMULATING RECIPE DEVELOPMENT IN A WORLD OF CONSTANT CHANGE



The process industry is riding powerful and relentless waves of change. And it's just the start. The industry is set to see more change in the next 10 years than it has experienced over the past 40. There are huge impacts for any process company that produces recipe-based products.

The principal driver? Customers. What they look for in the products and services they buy is in a state of constant flux. More connected and better informed than ever before, they are eager to share their experiences and learn from others. And their constant chatter across social media channels means perceptions, tastes and desires can arise or decline in the time it takes to read (and share) a tweet.

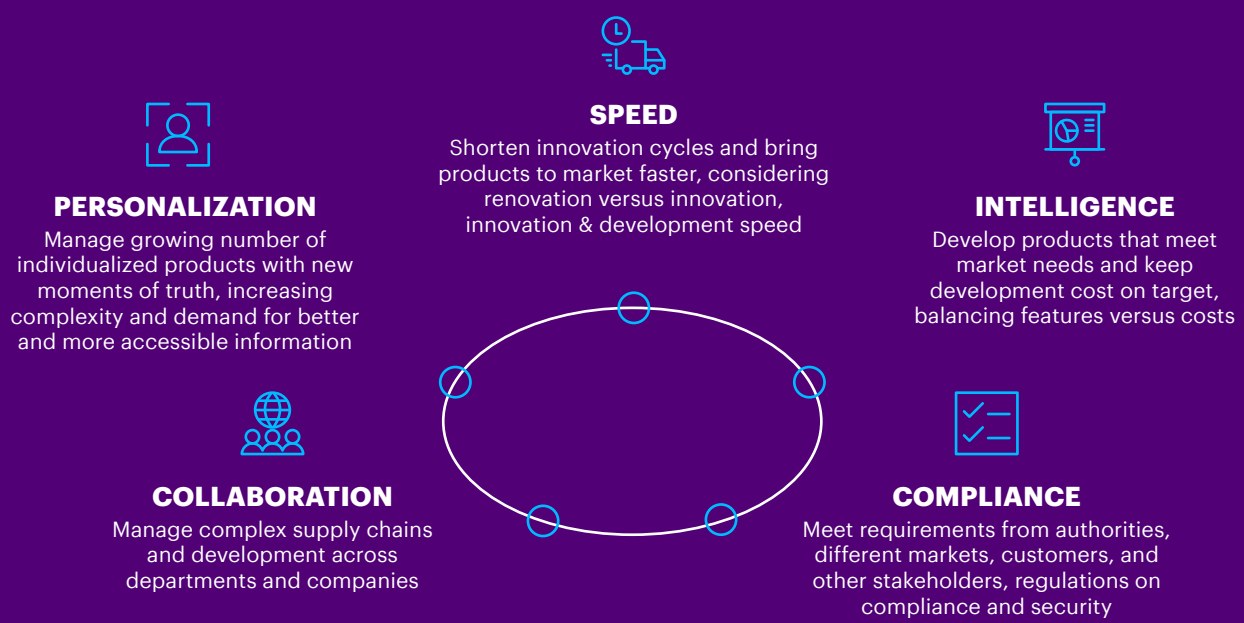
Nowadays, consumers also take a far more active interest in the provenance of the ingredients that go into the products they buy. They are acutely aware of both the environmental and health impacts of the choices they make—and expect companies to act in line with those concerns. In fact, they are so engaged in the world around them, that they are keen to co-create with process companies like consumer goods and services brands to personalize and even take control of product development.

In short, consumers are a formidable force. As a brand's advocate, they're invaluable. As an adversary, they can inflict lasting damage. Process industry businesses ignore them at their peril.

While enormously significant, consumers are far from the whole story. Increasing regulation covering ingredients, allergens, packaging, safety and compliance continues to proliferate with growing sanctions for transgressors. Global competition and increasing industry disintermediation are reshaping marketplaces everywhere. Smaller, nimbler entrants are stealing market share and there's a greater need for effective collaboration across rapidly expanding ecosystems of suppliers.

Against all this complexity (see Figure 1), it's never been more important for process industries to innovate and optimize how they create, develop, adapt and manufacture their products.

Figure 1: Product development challenges drive the case for improved efficiency



REINVENTING RECIPE DEVELOPMENT AROUND THE CONSUMER

One key area for process industry businesses is the process they deploy to develop the recipes for each and every product.

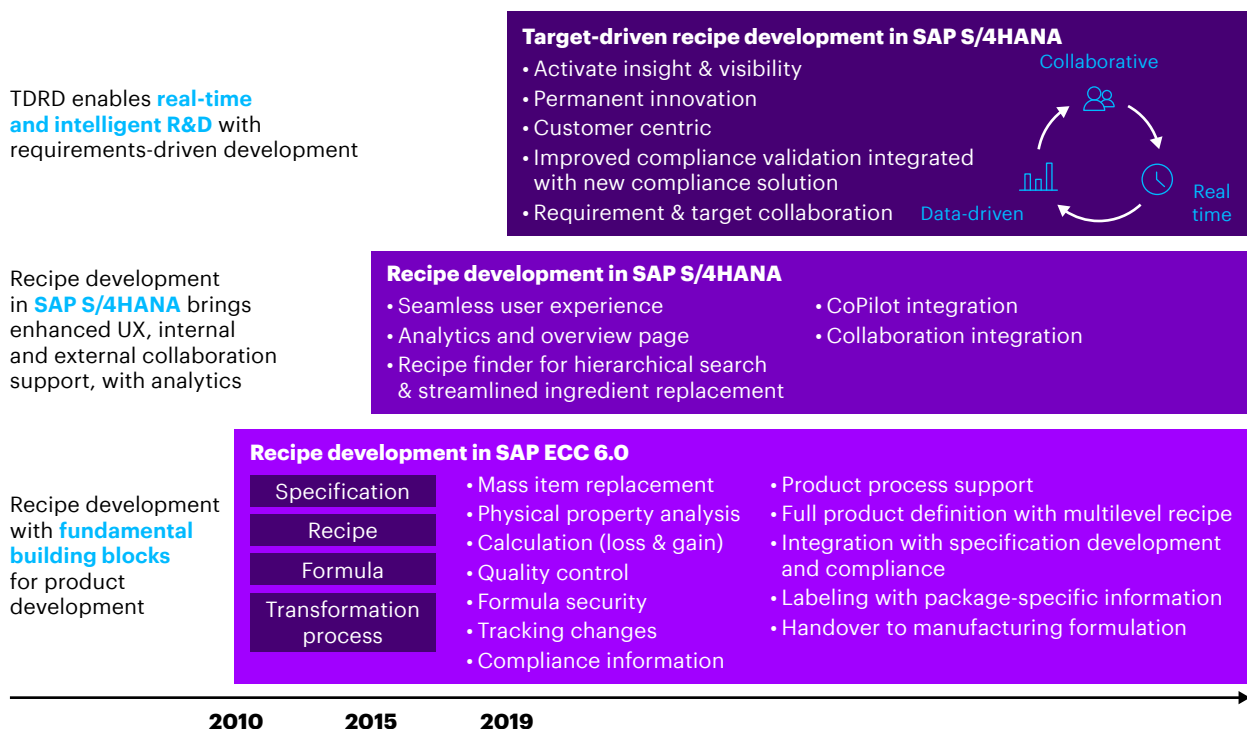
Over the past ten years and more, SAP has developed some crucial assets that help enable recipe managers to work more effectively. These include fundamental building blocks to track a list of ingredients, allergens and so on as well as the processes, security and control required to deliver a complete recipe.

Since then, it's been a continuous journey towards greater control and integration with other functions including Environment, Health & Safety (EH&S), packaging and manufacturing. But now, recipe development is poised to take a significant leap forward. In close collaboration, Accenture and SAP have developed a breakthrough solution

based on SAP S/4HANA®: target-driven recipe development (TDRD)—that will support recipe managers to respond to the new demands of a customer-driven world (see Figure 2).

So, what's the key difference? Rather than working from a bottom-up approach, TDRD takes the customer requirement as the key determinant of every recipe and then cascades those requirements through development and manufacturing. TDRD takes an integrated and data-driven 'system' view of recipe management, coordinating and integrating the variables that could affect a product—from the imposition of a sugar tax to the growing demands for vegetarian or vegan products.

Figure 2: The journey to TDRD



THE RECIPE AS A SYSTEM

While all the information recipe managers needed was previously available somewhere across the organization, TDRD's unique strength is to bring the data together, in real time, accessed and visualized through a user-friendly interface.

That means recipe developers and managers can now collaborate more easily and see all relevant formulae, calculations and checks on a single screen, on demand. What's more, TDRD's user interface is flexible, enabling individual recipe managers to adapt the display to provide insights and to suit their working style. Recipe managers can easily conduct simulations and experiments to understand the impact of recipe changes including nutrients explosion, cost and product compliance considerations that may arise on the fly.

TDRD enables recipe managers to reach target values for a product (e.g., in response to consumer and/or regulatory demands) by providing an end-to-end, detailed overview of the nutrients and other components.

The solution also helps enable rapid re-use of existing recipes, that can be tweaked to meet the demands of different markets and segments, as well as to discover how even the slightest change to overall ingredients can impact a formula's cost.

Taking such an integrated 'system-based' view of recipe management also helps enable better integration with the processes and supporting systems that deal with EH&S, manufacturing, labelling, compliance and regulations.

Target-driven recipe development provides real-time cost, nutrients or ingredients calculation, through a role and web-based user interface that gives the recipe developer or raw material manager all the relevant information on formula, calculations and checks in a single place.

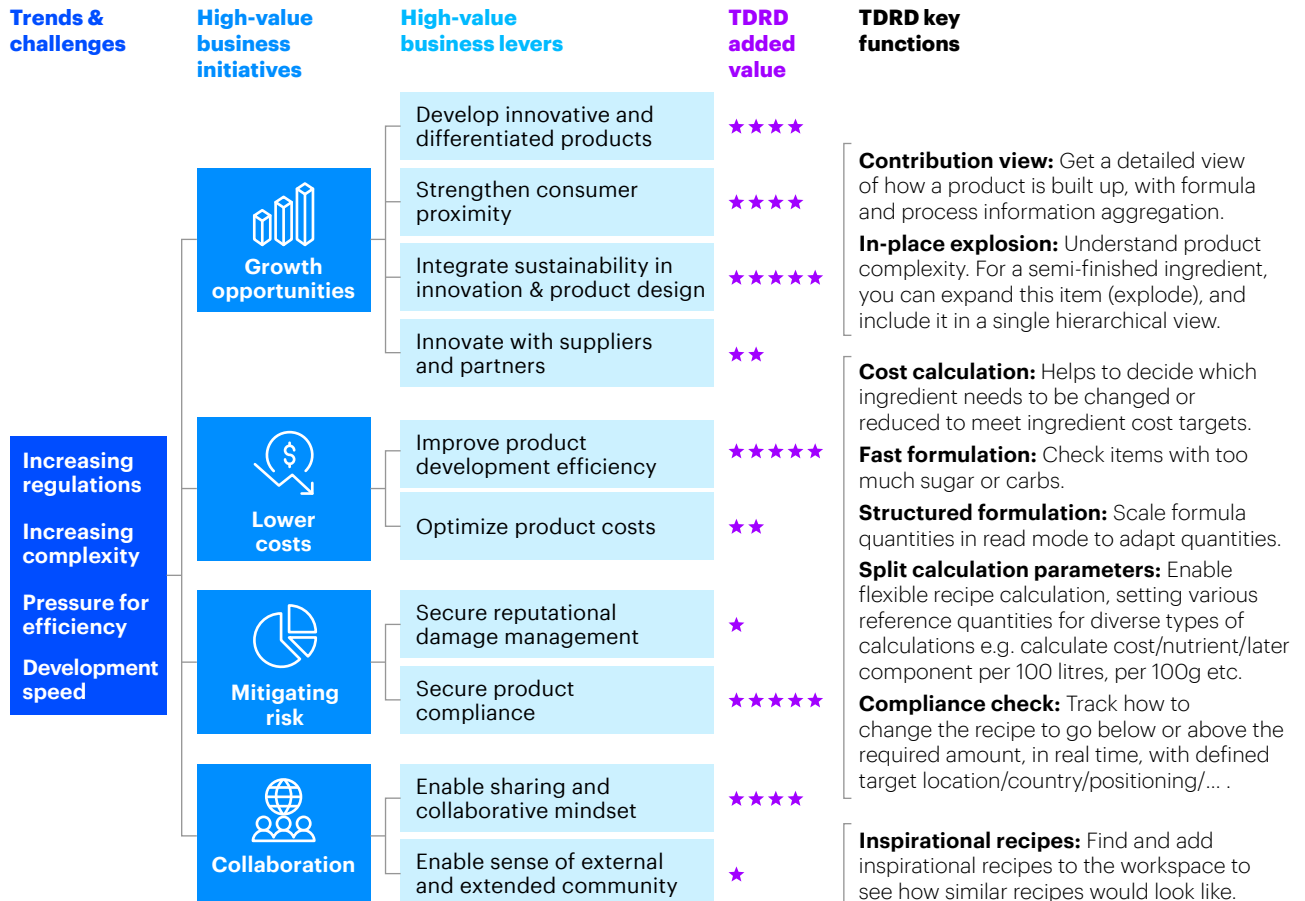
ALL THE RIGHT INGREDIENTS FOR SUCCESS

TDRD's advanced capabilities drive new value (see Figure 3) and are a step-change towards truly intelligent, collaborative, customer-centric recipe development.

So how will companies in the process industry benefit?

- **Accelerate new products to market:** real-time product information provided in a collaborative environment increases both the speed and quality of product development.
- **Reduce risks of non-compliance** and any associated penalties and sanctions, protecting reputation as well as the bottom line.
- **Lower cost** by decreasing rework and reuse of existing specification and product data.
- Massively **improve the overall efficiency of product development** through the reuse of approved and available materials and components.
- **Refresh existing products** to prepare them for rapid launch in new markets
- Use an **appealing user experience** for teams working in a fully-connected, collaborative way.

Figure 3: TDRD value drivers



OVERCOMING KEY CHALLENGES IN RECIPE-BASED PRODUCTS

Process industries face some key business challenges in developing, marketing and distributing recipe-based products. TDRD's advanced capabilities address each of them:

Meeting stakeholder and market needs

- Displays an early nutrient loss calculation to enable better estimates of the impacts of any reductions in nutrients on the final product.
- Provides a consolidated real-time view of the impacts of any modification to a recipe at the moment modifications are made. This allows adherence to any limits placed on a product's specification and compliance with the marketing brief.
- Defines and categorizes ingredient/nutrient limits on each product so teams can adjust the formula to address market demands.

Improving development efficiency

- Provides a customizable layout so product developers can see the information they need—in one place, at one time.
- Incorporates an in-place explosion mechanism to help product developers understand product complexity in the process; if an ingredient is adjusted, users can expand that item, include it in a single hierarchical view, and work on it to see knock-on effects during development.

- A formulation workspace enables linkages to be made between different recipes that have the same targets but may be at different stages in development trials.

Securing product compliance

- Consolidates the compliance rules and flags warnings during formulation where specific ingredients/nutrients risk not meeting the specified limits or targets.
- Defines target location/country/positioning within then formulation workspace and automates compliance assessment by embedding specific requirements in the calculation steps, with relevant information available at point of need.

Optimizing product costs

- Helps product developers to understand which ingredient should be changed or reduced to meet ingredient cost targets, as well as showing how any modification to ingredients will impact the formula cost.



HOW CAN ACCENTURE HELP?

To reap its full benefits, TDRD needs to be implemented as part of a wider, end-to-end Product Lifecycle Management (PLM) transformation.

In our experience, this can lead to significant gains (see Figure 4).

We enable and support the wider PLM transformation and implement TDRD by coordinating the key elements for performance. To enable business process transformation and accelerate value, we provide:

- Process industry best practices and industry-specific business models
- Customized business case around product development
- Business processes to optimize end-to-end capabilities to transform at scale
- Digital agenda for transformation and a related product development roadmap
- Value-led program management
- Industry-specific, industrialized and scalable SAP S/4HANA implementation and delivery

Figure 4: Potential TDRD benefits

Accelerating time to market



4-35%
Faster product launch



10-30%
Improved product development

Decrease cost



5-15%
Direct materials cost



10-30%
Operational and development/engineering expense

Decrease cycle time



10-55%
Change control cycles



5-35%
Design cycles

KPI's based on Accenture experience (illustrative)

WHY ACCENTURE

Engineering X.O

Helping our clients increase speed to market with processes and technologies throughout the product design cycle from prototyping to simulation and visualization. Our solutions boost engineering efficiencies and maximize returns from R&D investments, resulting in improved innovation and product development performance.

Our delivery excellence makes your digital transformation a reality

Targeting and delivering tangible value for our clients is our primary focus—and delivery is where we turn solution into action and action into results.

Leading SAP partner for services and innovation

We have early access to SAP innovations and help shape them.

49

Industries served



Industry X.O

Global practice focused on the entire product value chain to help our clients innovate, engineer, manufacture and operate in a connected world.

350+

SAP PLM experts

400+

PLM strategy and business consulting experts

10K+

Industry X.O professionals

50+

Delivery centers

120+

Countries

40+

Industries



Professionals

with deep industry, technology, business and process skills

Intelligent tools

to transform client data into intelligent insights

1st

in co-development and co-innovation on SAP S/4HANA, Leonardo and Cloud Platform

40

SAP Pinnacle Awards

16

Liquid Studios for SAP Solutions

100+

SAP awards in the last 5 years

>50K

SAP practitioners

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About Accenture

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191454