



SAP Analytics Cloud at Hydro

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Agenda

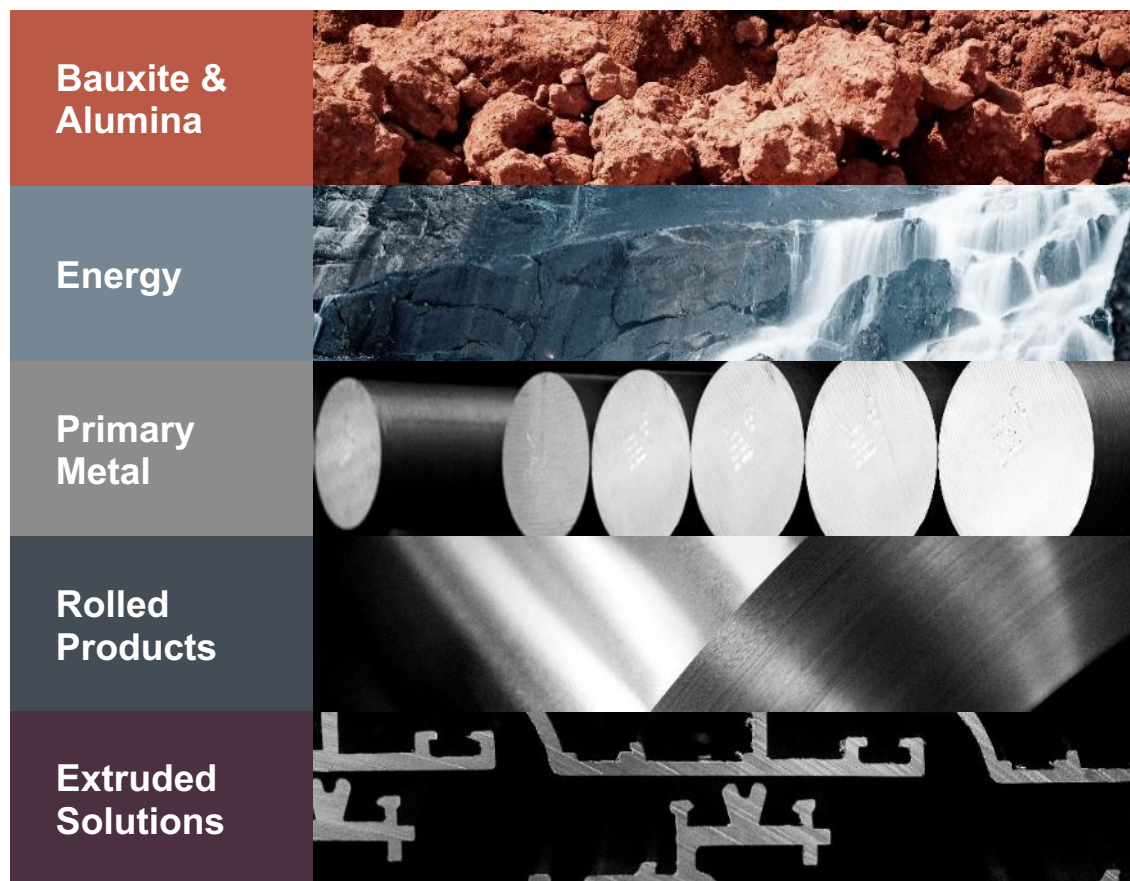


1. Intro to Hydro	Erik Fosser
2. Intro to SAP Analytics Cloud	Erik Fosser
3. SAP Analytics Cloud use cases Hydro	Erik Fosser
4. Analytic initiatives and learnings	Erik Fosser
5. Planning initiatives and learnings	Holger Lämmel

An integrated and customer-oriented aluminium company



With robust positions across the entire value chain



- Global provider of alumina, aluminium and aluminium products and solutions
- Leading businesses along the value chain; raw materials, energy, primary metal, rolled products, extruded solutions and recycling
- 35,000 employees at 150 locations in 40 countries
- Market cap ~NOK 100 billion/ ~USD 12 billion
- Annual revenues NOK 109 billion (2017)
- Included in Dow Jones Sustainability Indices, Global Compact 100, FTSE4Good

Intro to SAP Analytics Cloud



One | Simple | Cloud



Unified experience for Planning, BI and Predictive all in one service
Live data **connectivity** enables SaaS for everyone
End-to-end analytics for the **Intelligent Enterprise**

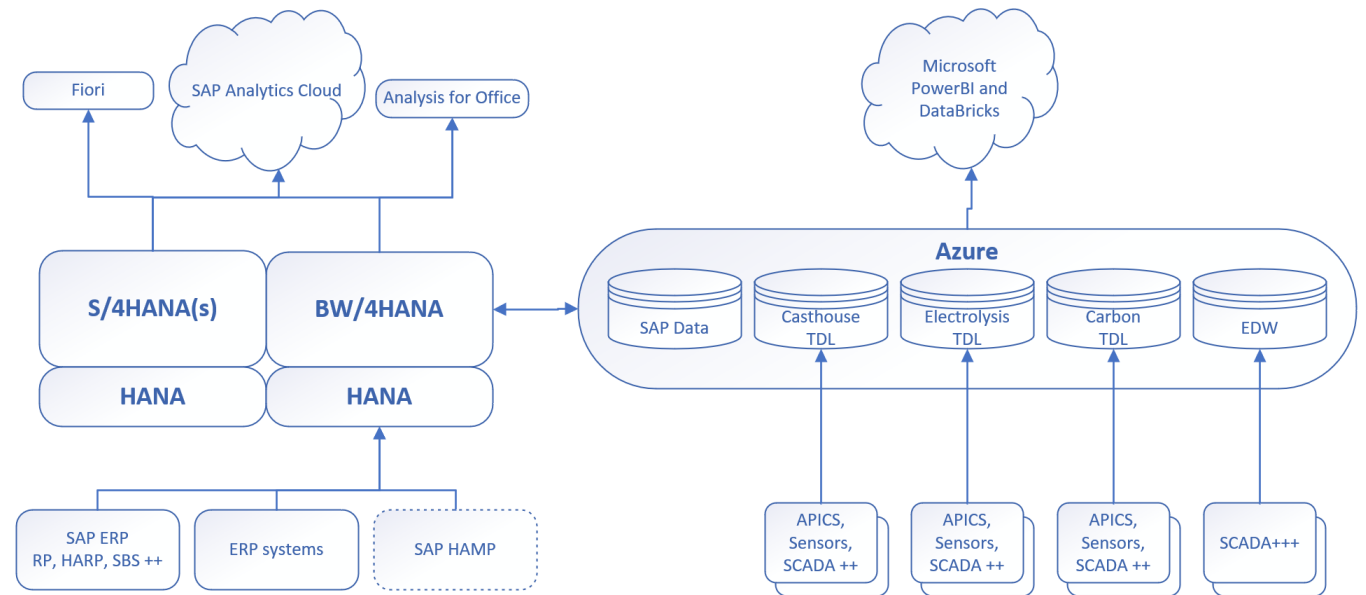
SAC use cases Hydro

- Analytics
 - Self-service dashboard creation
 - Light weight predictive scenarios tried out
- Planning
 - Business Planning & Estimate with SAC
 - Proof of Concept for Primary Metal
- Digital Boardroom
 - Not in scope at Hydro



Analytic initiatives and status

- Analytics initiatives:
 - Profit center Analytics
 - Cost center, order, WBS analytics
 - Analytics solution cross multiple source systems
- Issues found during implementation
 - Many features not supported using Live connection (typical Smart features)
 - Update backend systems in same pace and schedule as SAC releases
 - Script error messages in SAC because of errors in back end systems

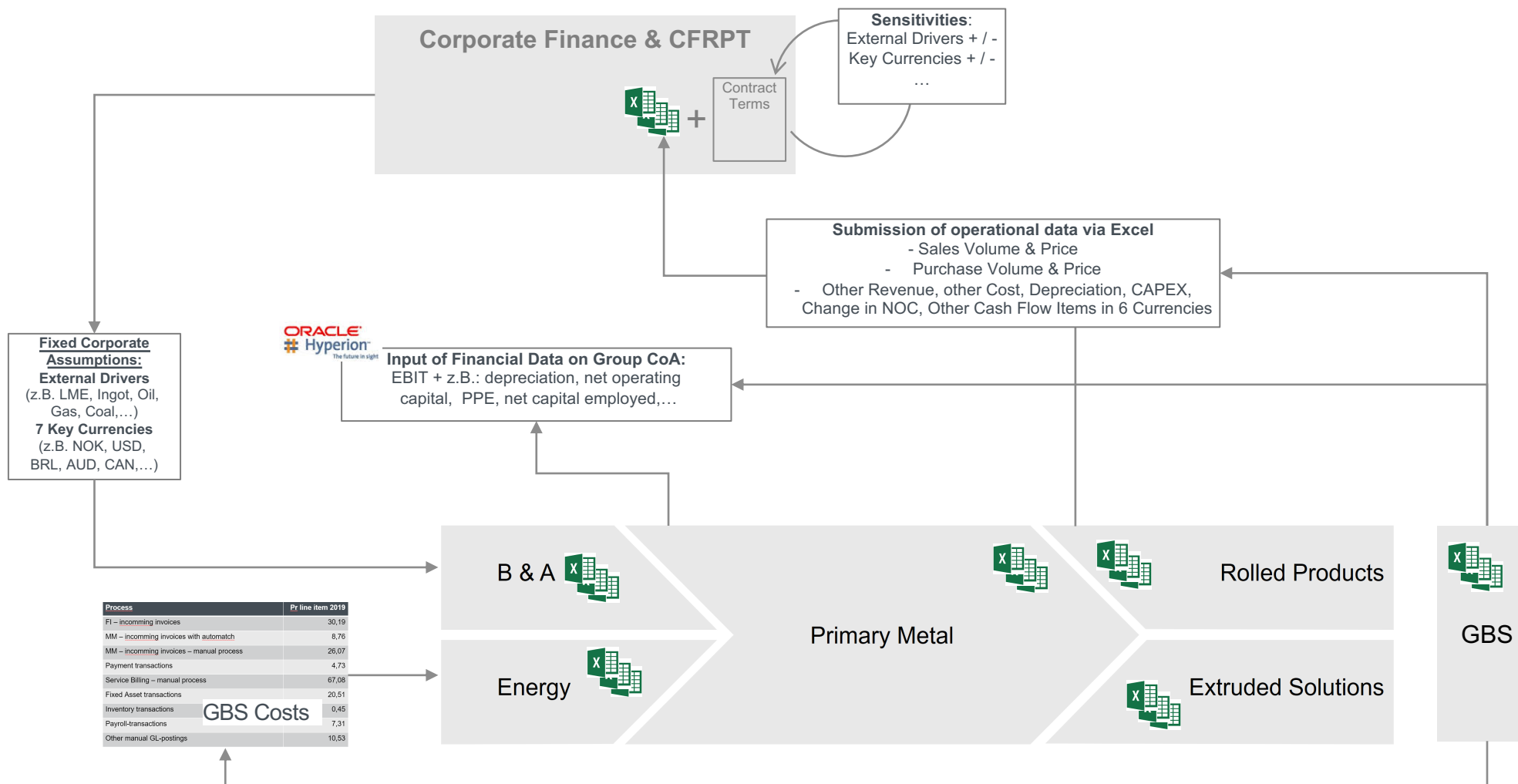


Benchmark of plants

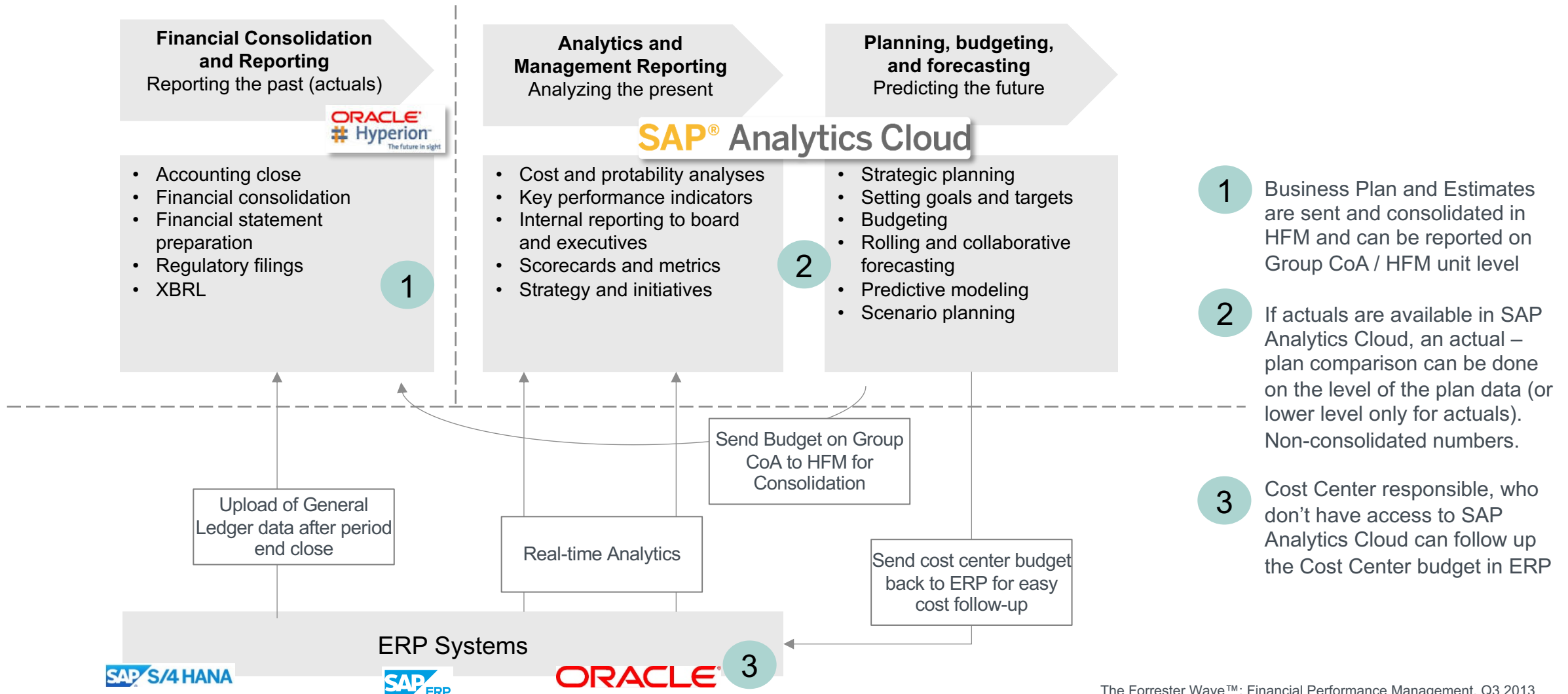


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Today's situation – Business Planning & Estimate



Planning, Analytics and Consolidation tools



Initiatives and Learnings



Initiatives

Proof of Concept
for Primary Metal

Validation of Planning
Functions with S/4 HANA

Pilot for Planning
Bauxite & Alumina

Project for Global
Business Service

SAC is the strategic tool from SAP and the preferred
planning tool for Hydro

Lessons Learned

- The tool is not yet as powerful as SAP would like it to be and falls behind compared to other more mature planning tools. Functionality comes in cycles
- If functionality is there, it sometimes has limited functionality
- Core functionalities for planning tools needs to be evaluated
 - Input Templates (Complex selections)
 - Planning Functions / Calculations (Variables / Functions)
 - Performance and Error Tracing (Protocol / Data Display)
- Write back to S/4 into table ACDOCP works well
- Reporting in SAC and in Analysis for Office (with limited functionality)



Hydro

We are aluminium

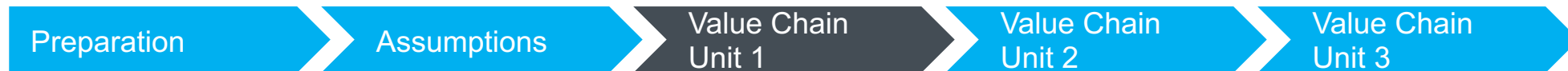


Proof of Concept Primary Metal Planning Process Overview



- 5 Year Plan
- Yearly granularity
- **Next Year Plan**
- ~~Monthly granularity~~
- **Yearly granularity**
- Focus on different aspects
- Next Year Plan
- Monthly granularity

Scope: Smelter – Karmøy – Extrusion Ingot

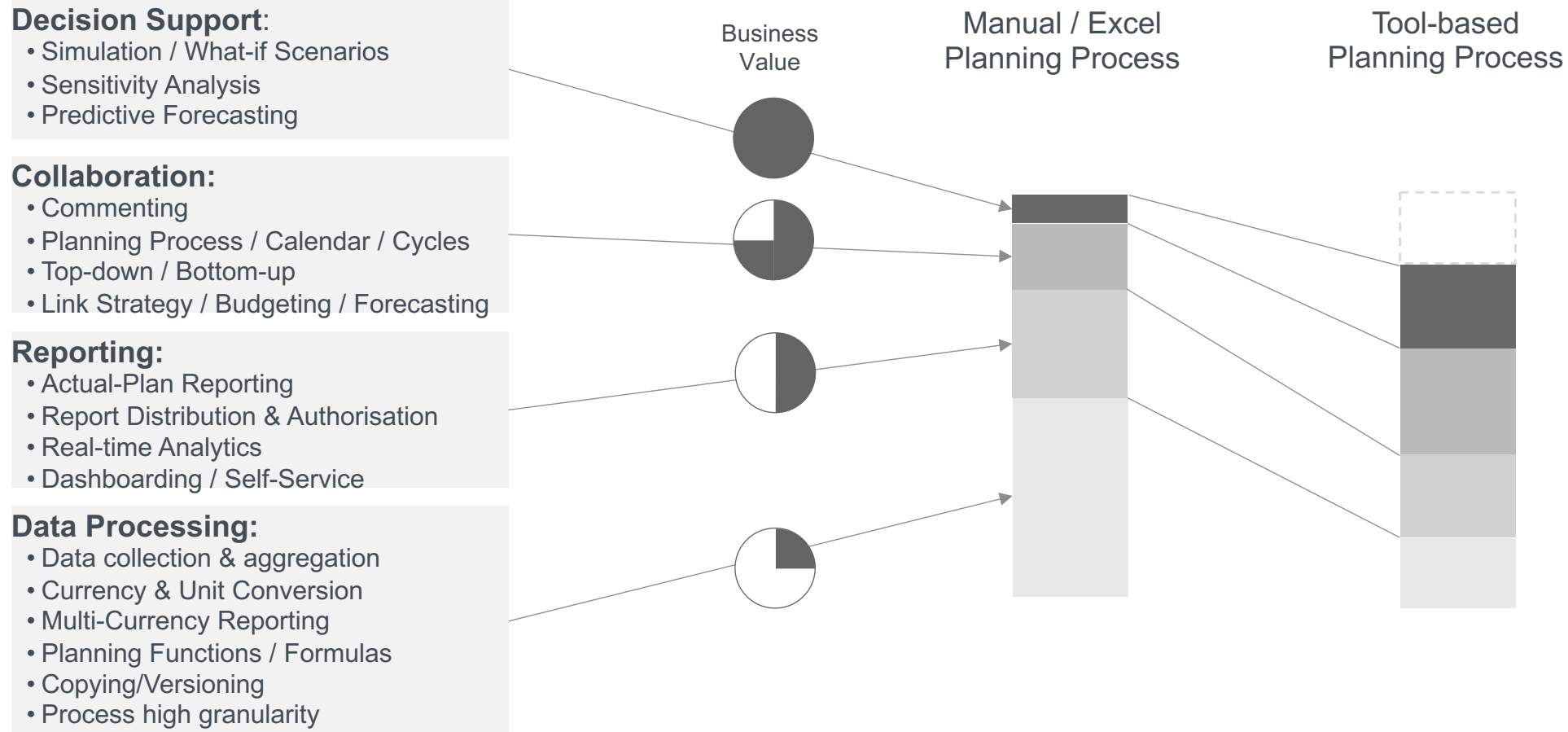


- **Planning Calendar**
- **Planning Version Set Up**
- **Planning Template Preparation**
- **Corporate**
- Primary Metal
- **Commercial**
- **Allocate assumptions to Value Chain Units**
- Carbon Planning
- Per Plant
- **Electrolysis Planning**
- **Per Plant**
- **Allocate Values to Value Chain Unit 3**
- **Casthouse**
- **Per Plant and product**
- Several planning cycles per planning process



How does technology improve planning?

Become more effective and more efficient – “Do more with less”



“Technology alone does not ensure best in class, but you can’t be best in class without modern technology”