

An Integrated Platform for Mission Performance: Goddard Space Flight Center's Meta Information System

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The “Why” Factor (GSFC Mission Portfolio)



Source: NASA GSFC Overview

Goals

An integrated, *state-of-the-market* information system for process performance, data/information management, and analytics supporting NASA/GSFC mission performance, through:

- conformance of GSFC mission products and services with requirements on a sustainable basis;
- product and process improvements throughout the GSFC *enterprise*;
- informed decision-making; and,
- reduction of risks.

Transforming GSFC's Information System to support and sustain mission success

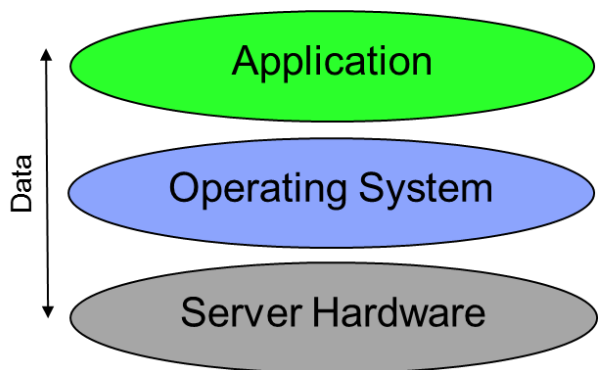
- **July – October 2012**
 - Conducted *As-Is/To-Be* Enterprise Architecture Study
 - In-depth review of GSFC's *as-is* system *architecture* revealed
 - Stand-alone systems and applications
 - Isolated data and processes
 - Extremely limited data analytics and/or reporting capabilities
- **November 2012**
 - Completed industry survey for the *to-be* enterprise architecture
 - 50 commercial vendors
- **February 2013**
 - Selected Intelix Technologies
 - Software licensed for NASA
 - **Meta**: GSFC's Electronic Management System
 - Shorthand reference to Metamorphosis – process of *transformation*
 - Also *metadata*

Two Approaches to System Design

Silo Approach = Traditional Thinking



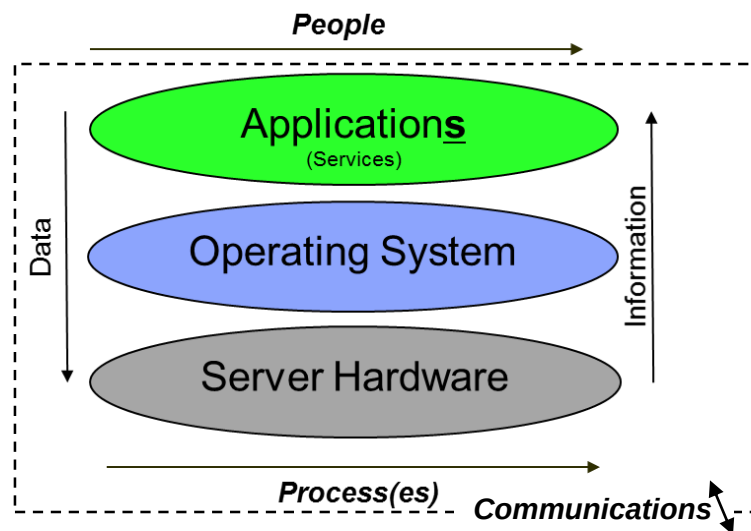
A Single Entity



Integrated Approach = System Thinking

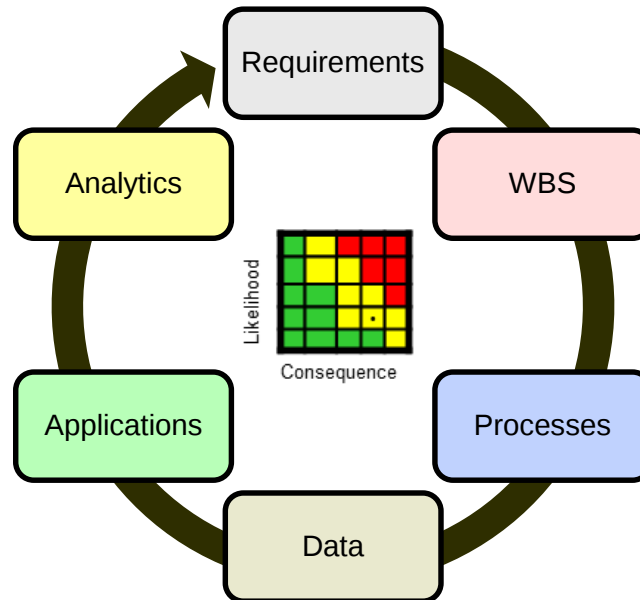


An Enterprise



Meta Paradigm

- Mission requirements, drive work breakdown structures
- WBS drives processes & data
- Processes & Data drive Meta's applications
- Meta's applications enable data integration
- Data integration enables information & analytics
- Information & Analytics provide context and support risk-informed decision making



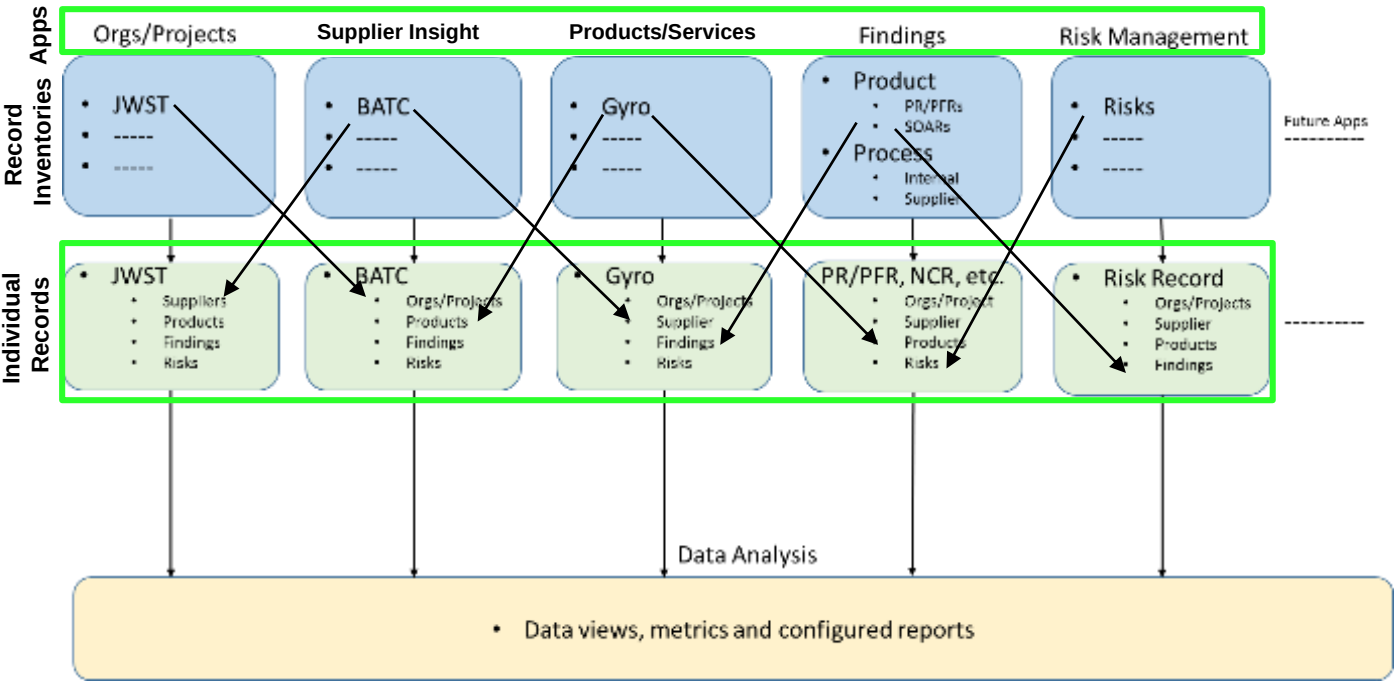
- ***Maximize inherent capabilities of the system/platform***
 - Leverage applications
 - Integrate data
 - Implement and maintain security
 - Maintain uniform functionality (look & feel)
 - Maintain state-of-the-market via recurring, customer-driven software updates/patches and process improvements
- ***Minimize duplication of effort & the need for free text data***
 - Enter data, *once*
 - Utilize pre-defined data-points for increased user efficiency, minimize human error and enhance analytics
- **Ensure stakeholders, processes, and data drive applications**

System thinking to implement a modern enterprise architecture that combines a robust, scalable object-oriented platform with integrated processes and data.

Meta System Design

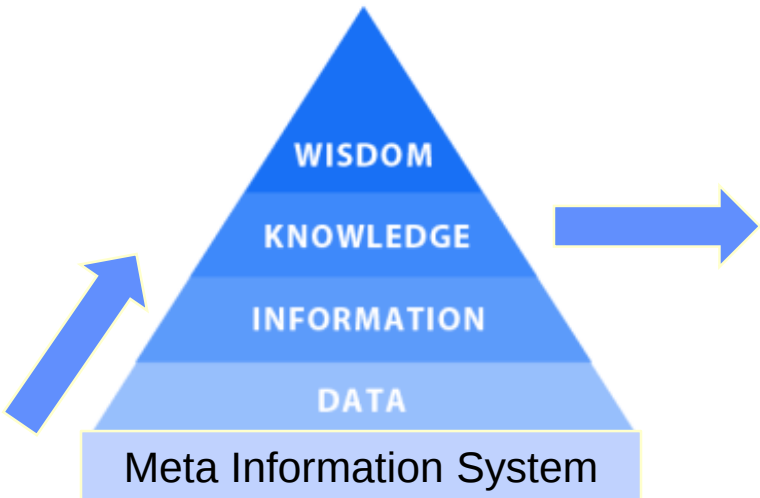
Focuses on Integration & GSFC Enterprise

Notional Depiction of Integrated Applications & Data



Meta integrates data & information across applications, creating efficiencies and knowledge for users

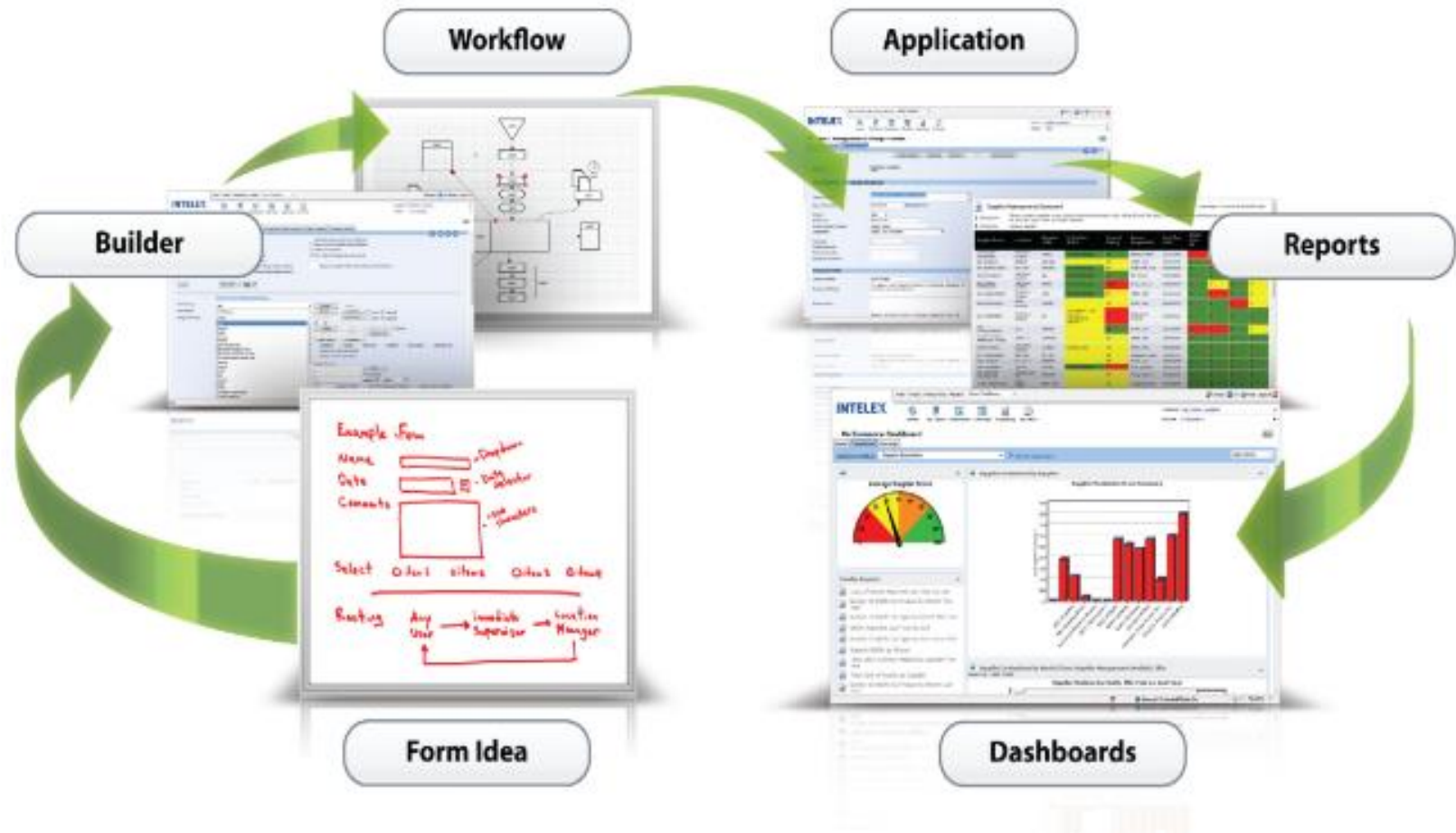
Meta applications for smart processes



Support goals /desired outcomes

Process Performance

Flexible and Responsive, from Concept through Deployment and Support

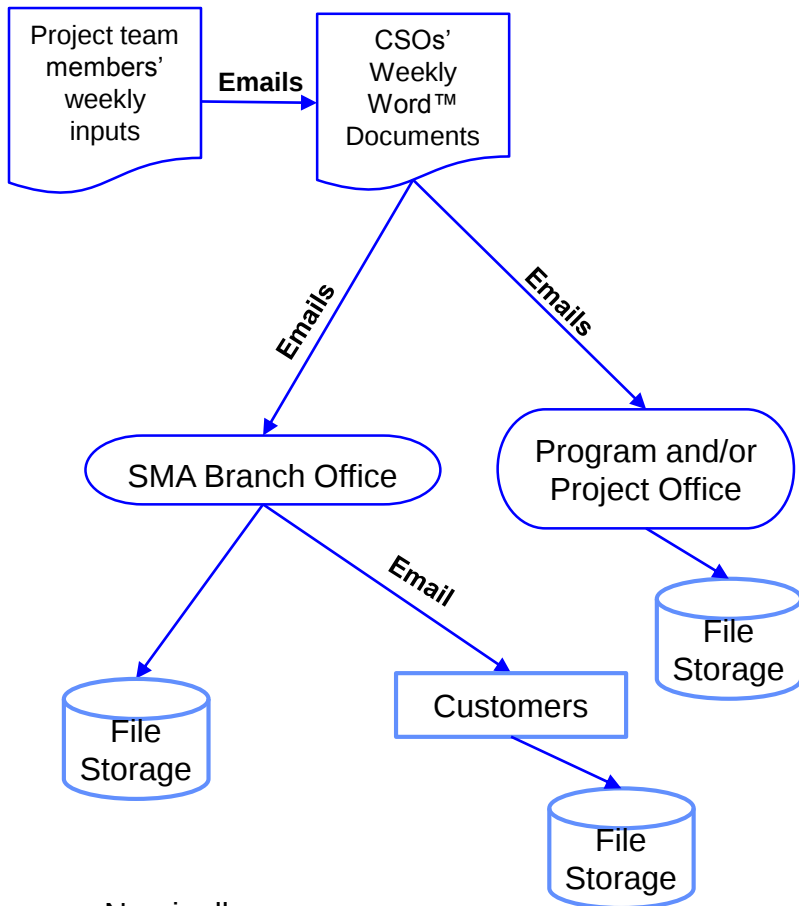


We blend process knowledge and information system expertise to build and operate smart processes

Process Performance

Old vs. New SMA Team Weekly Process

Old – Emails, Word™ & File Folders



Nominally:

1 CSO/report for each *program*

1 CSO/report for each *project*

Presently = ~24 Reports (x2, for ~48 releases)

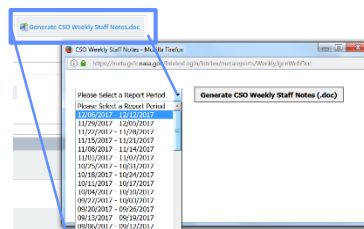
New – Meta's SMA Team Weekly App



"Released" = the following database records (as applicable) have been updated, and customers have been notified

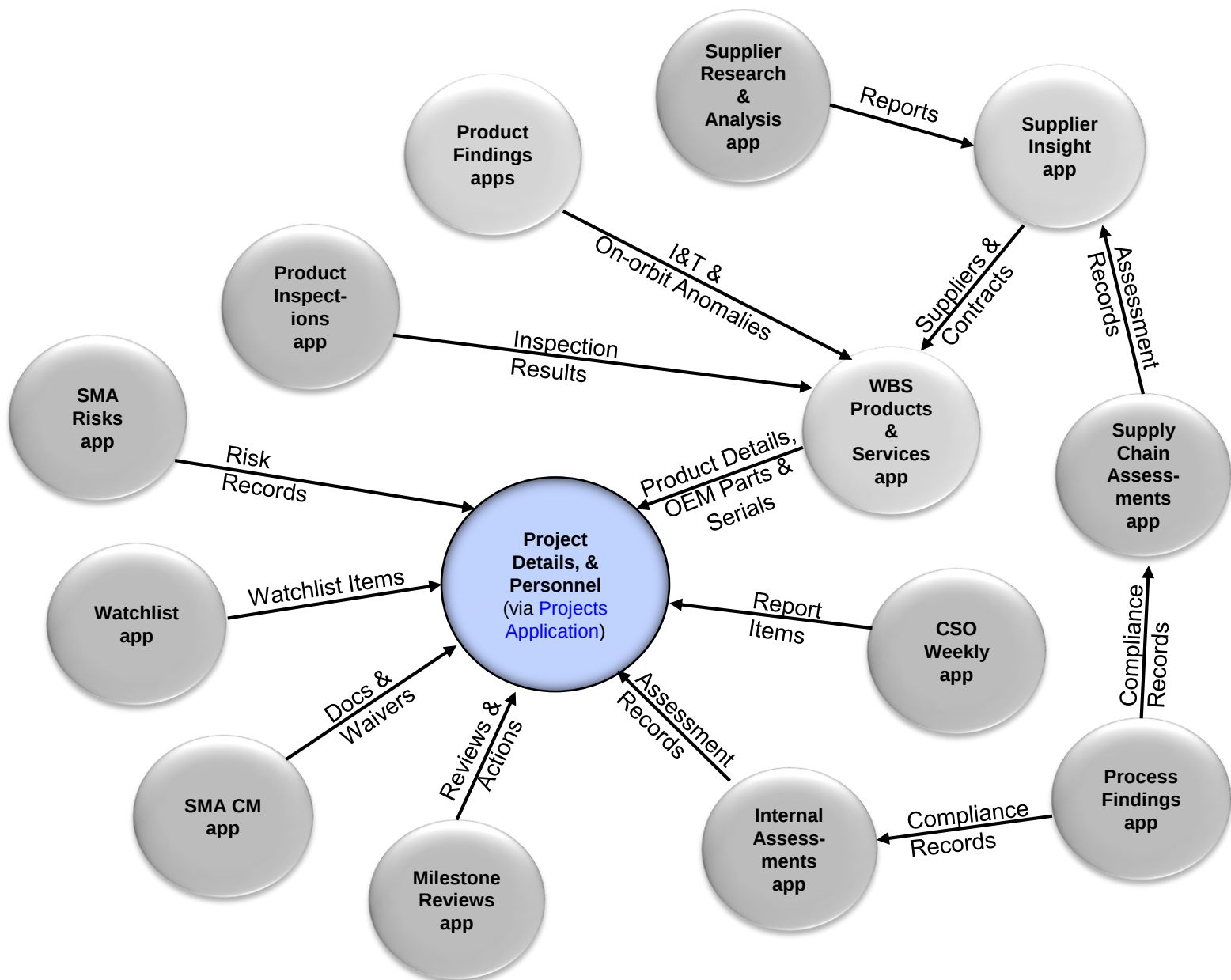


...along with provisions for generating Word™ files & analytics



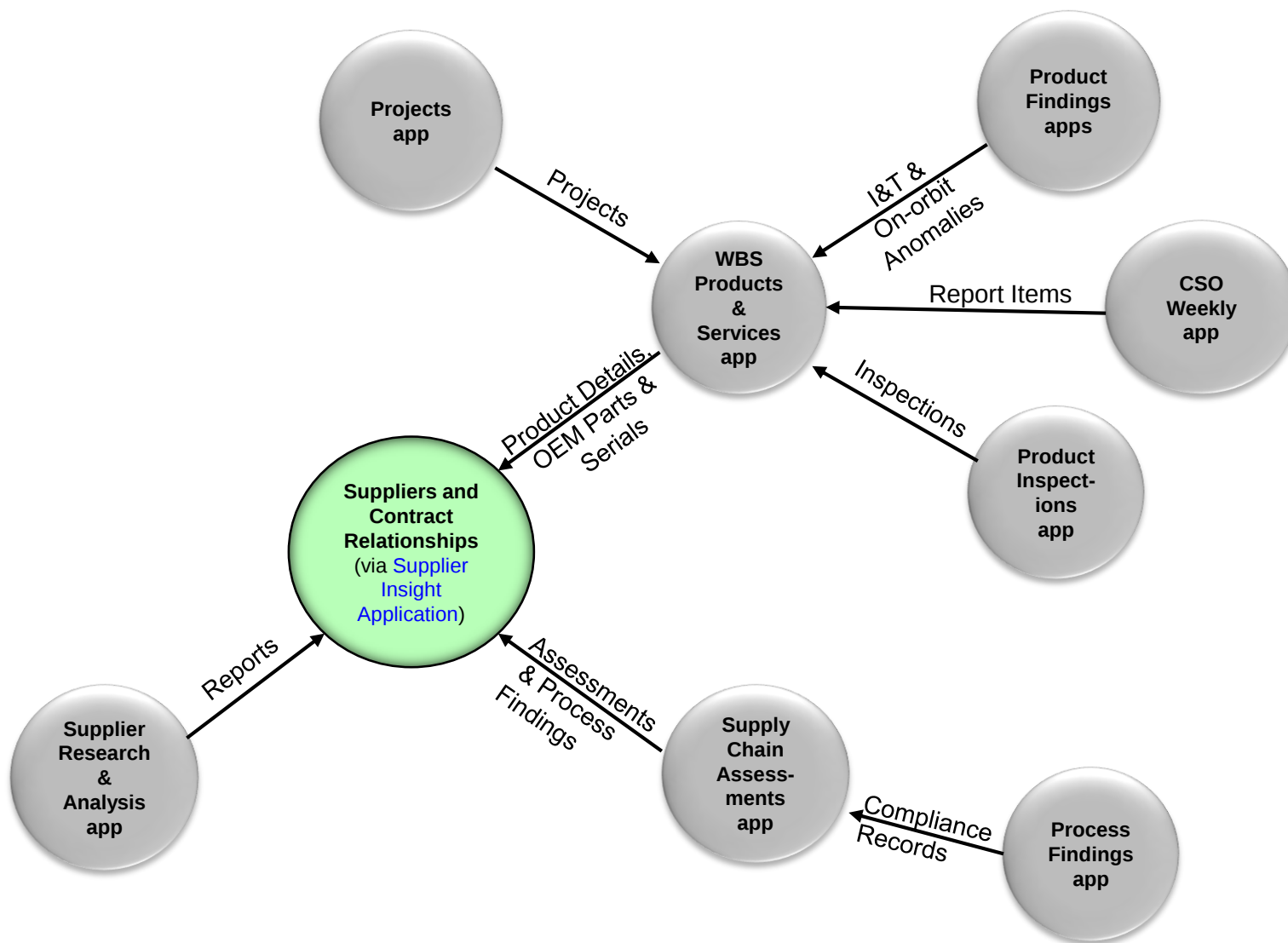
Data & Application Integration

The Project Perspective



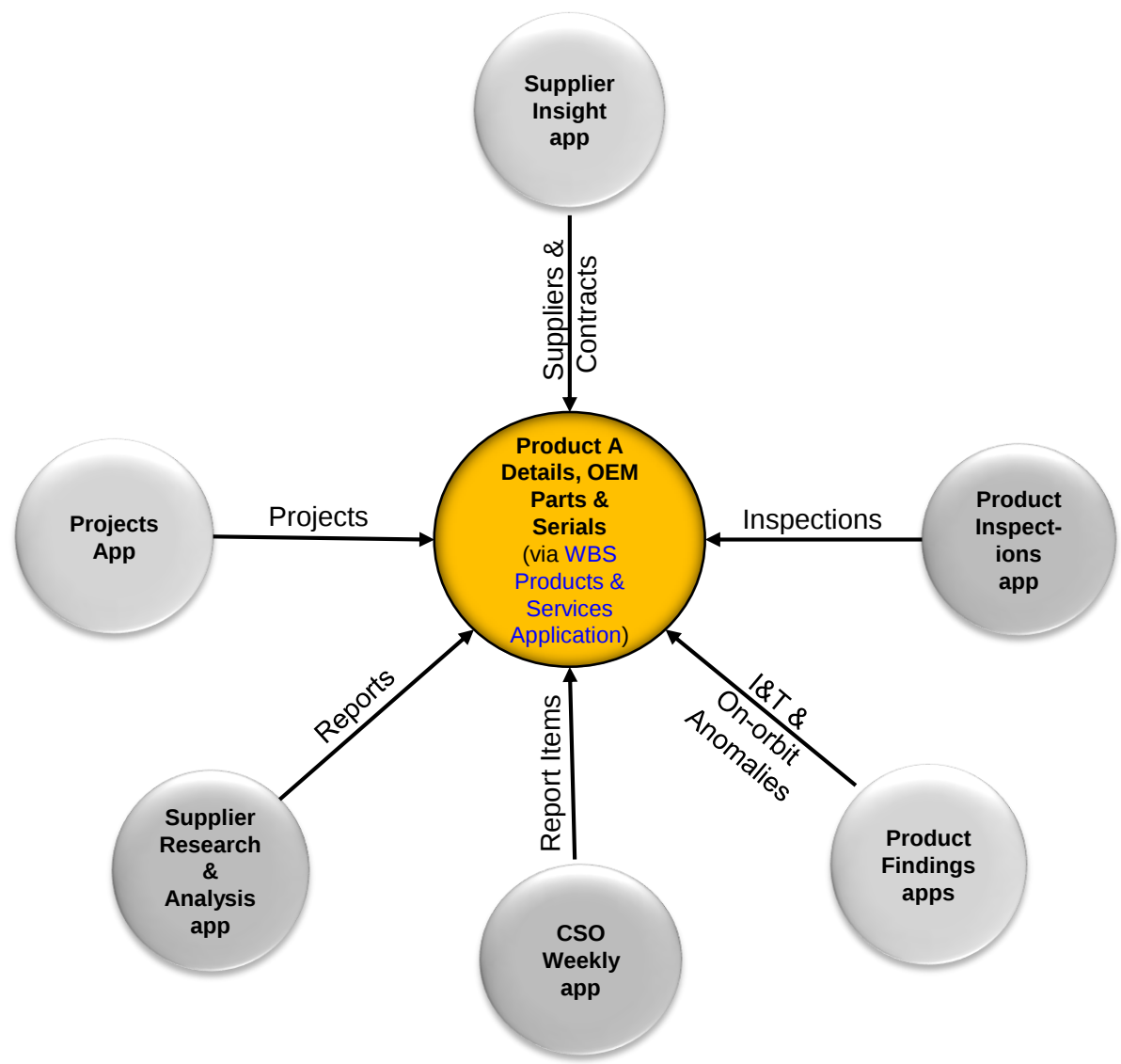
Data & Application Integration

The Supplier Perspective

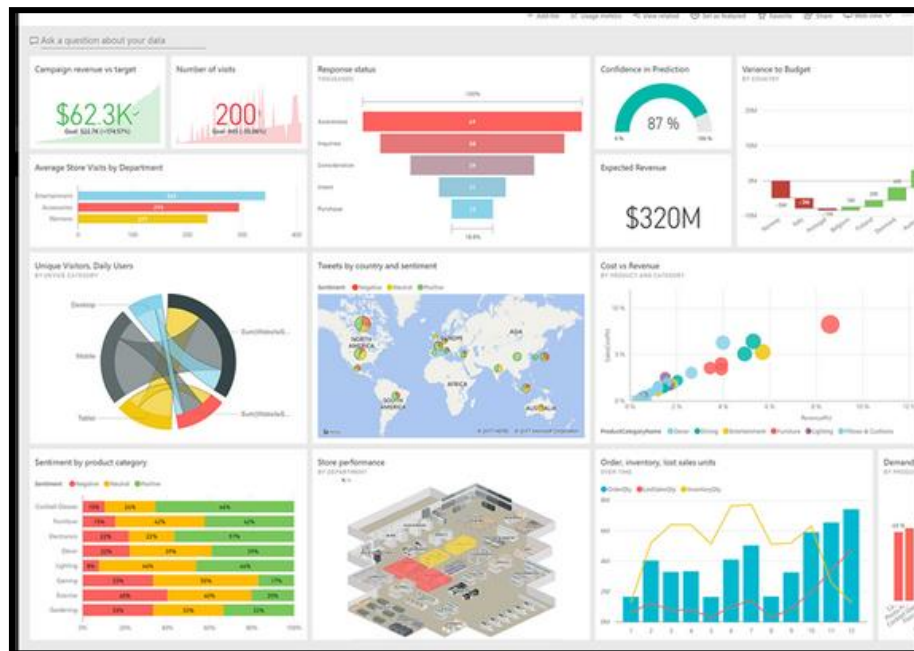


Data & Application Integration

The WBS Product/Service Perspective



- Built-in (and extendable) capabilities for analytics to support process management, in-depth analysis and decision-making
- Standard and customizable views
- Real-time data visualizations



The Transformation GSFC's Information System, 2012 - Present

People, Products & Services

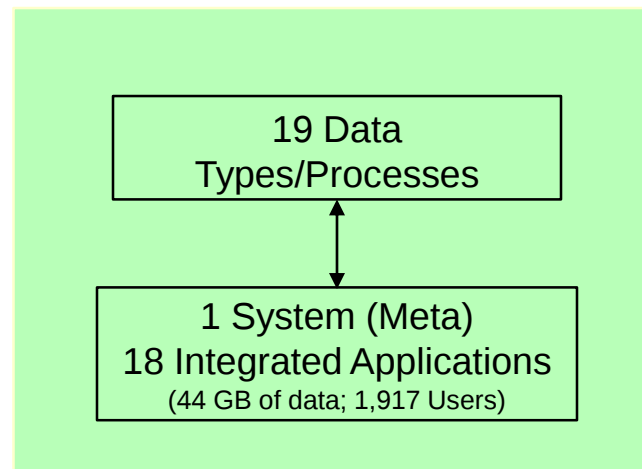
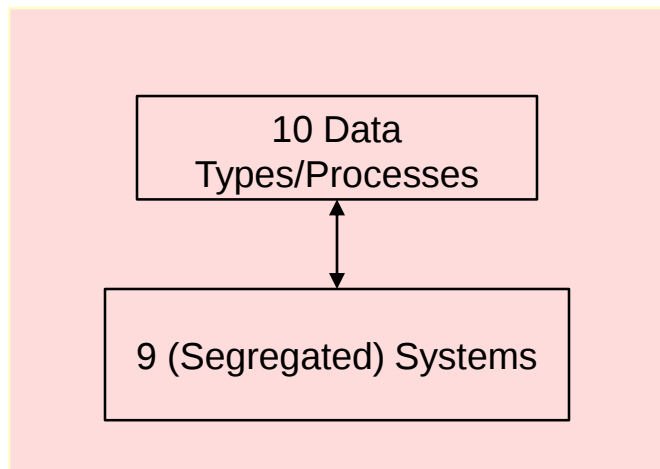


Processes

Life-Cycle Phases	Pre-Phase A: Concept Studies	Phase A: Concept & Technology Development	Phase B: Preliminary Design & Technology Completion	Phase C: Final Design & Fabrication	Phase D: System Assembly, Integration & Test, Launch & Checkout	Phase E: Operations & Sustainment	Phase F: Closeout
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2012

Present



- Suboptimal GSFC Management System
 - Hinders Situational Awareness
- Detrimental to GSFC's Performance

- Optimizes GSFC's Management System
 - Fosters Situational Awareness
- Enhances Center Performance

Ongoing Challenges

- Close process and data gaps
- Continue to build-out and refine analytics
- Maintain and foster steady growth in system utilization
- Stay abreast of user / stakeholder needs and system capabilities
- Communication, communication, communication

Discussion

