Service-Oriented Modeling Framework (SOMF) for Business & Technology

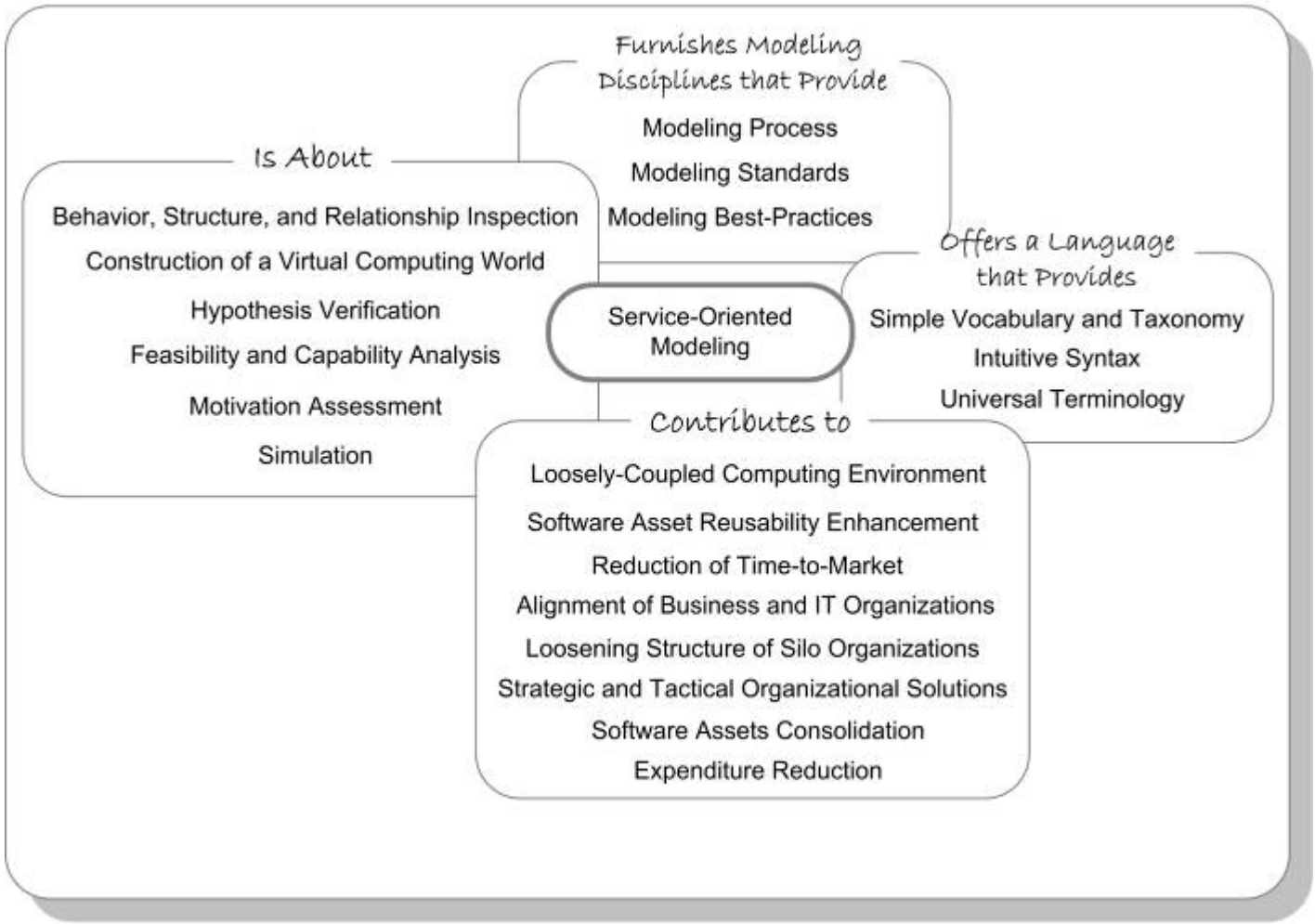
An SOA Implementation Framework

Service-Oriented Discovery & Analysis Example

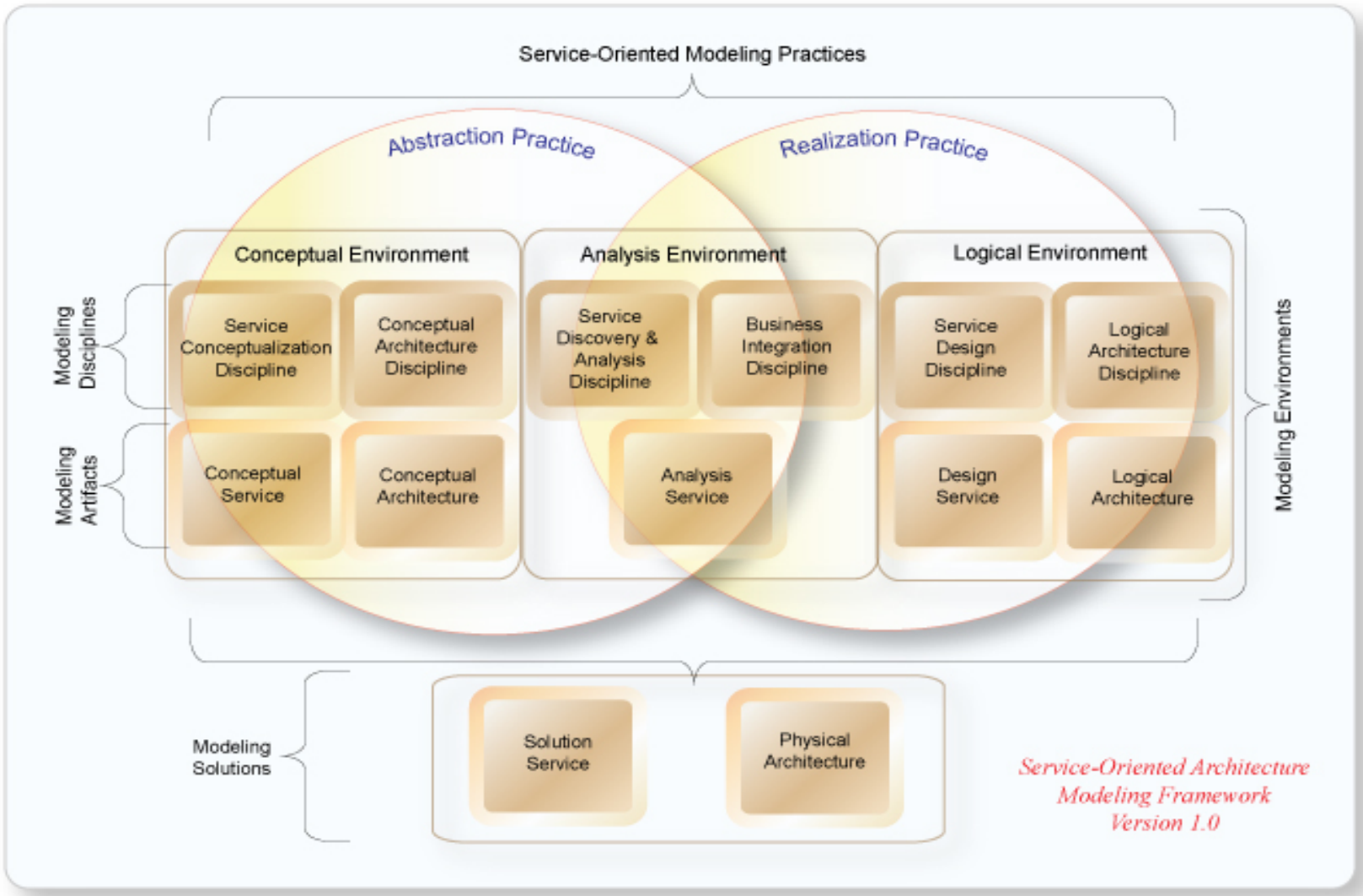
What is Service-Oriented Modeling?

"Service-oriented modeling is a software development practice that employs modeling disciplines and language to provide strategic and tactical solutions to enterprise problems. This anthropomorphic modeling paradigm advocates a holistic view of the analysis, design, and architecture of all organizational software entities, conceiving them as service-oriented assets, namely services."

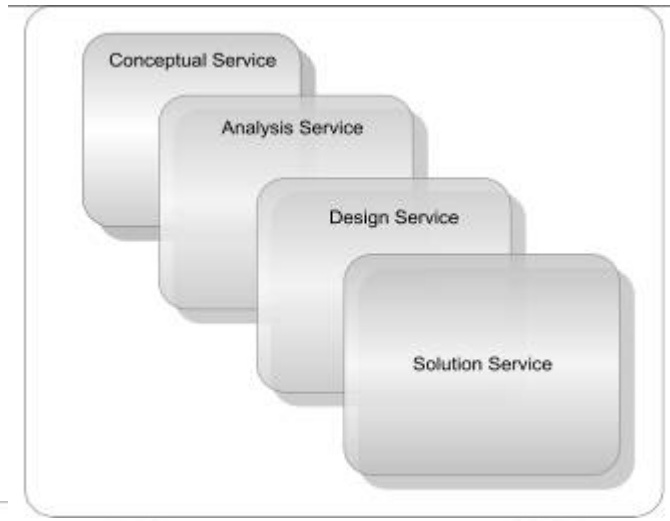
What is Service-Oriented Modeling?

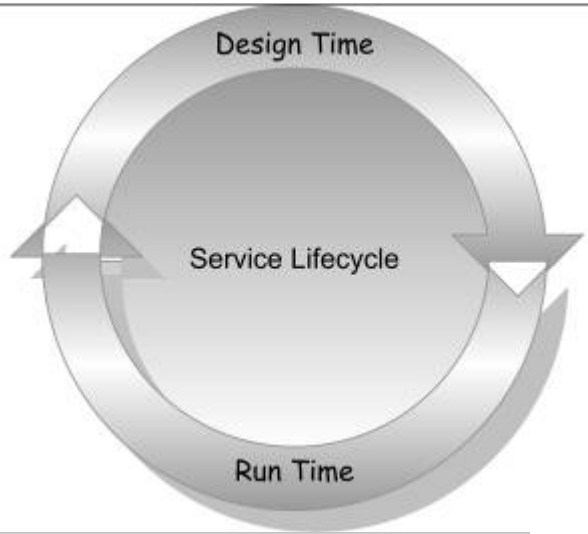


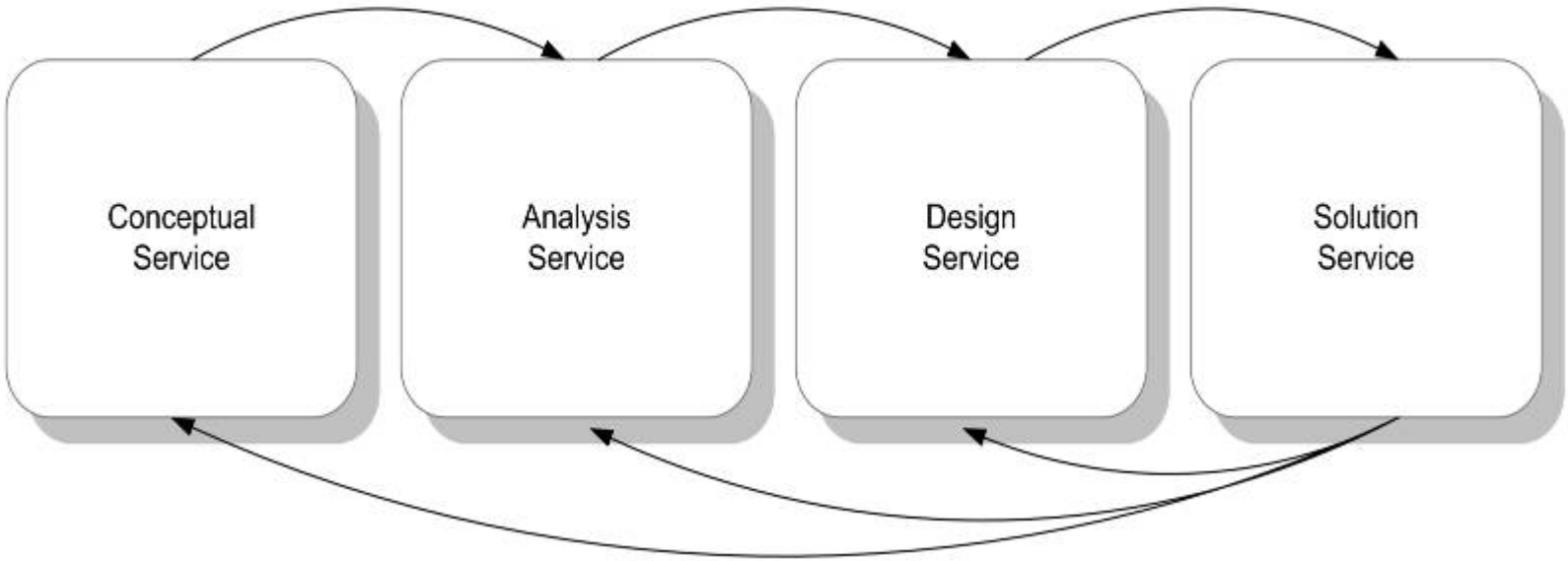
Service-Oriented Modeling Framework



Service Metamorphosis







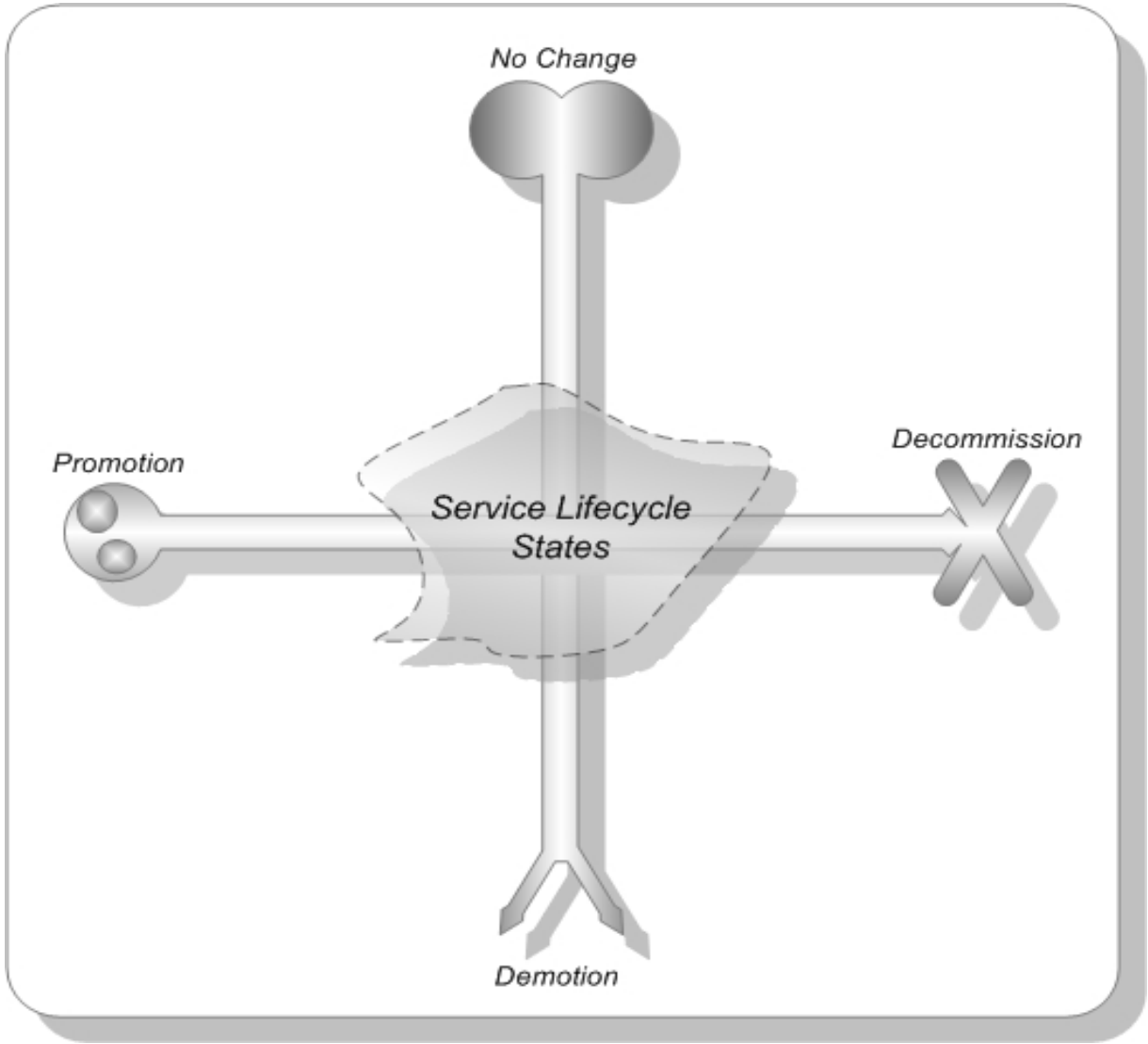
Management of Service Life Cycle States

Promotion – increasing business functionality, funding, and reuse

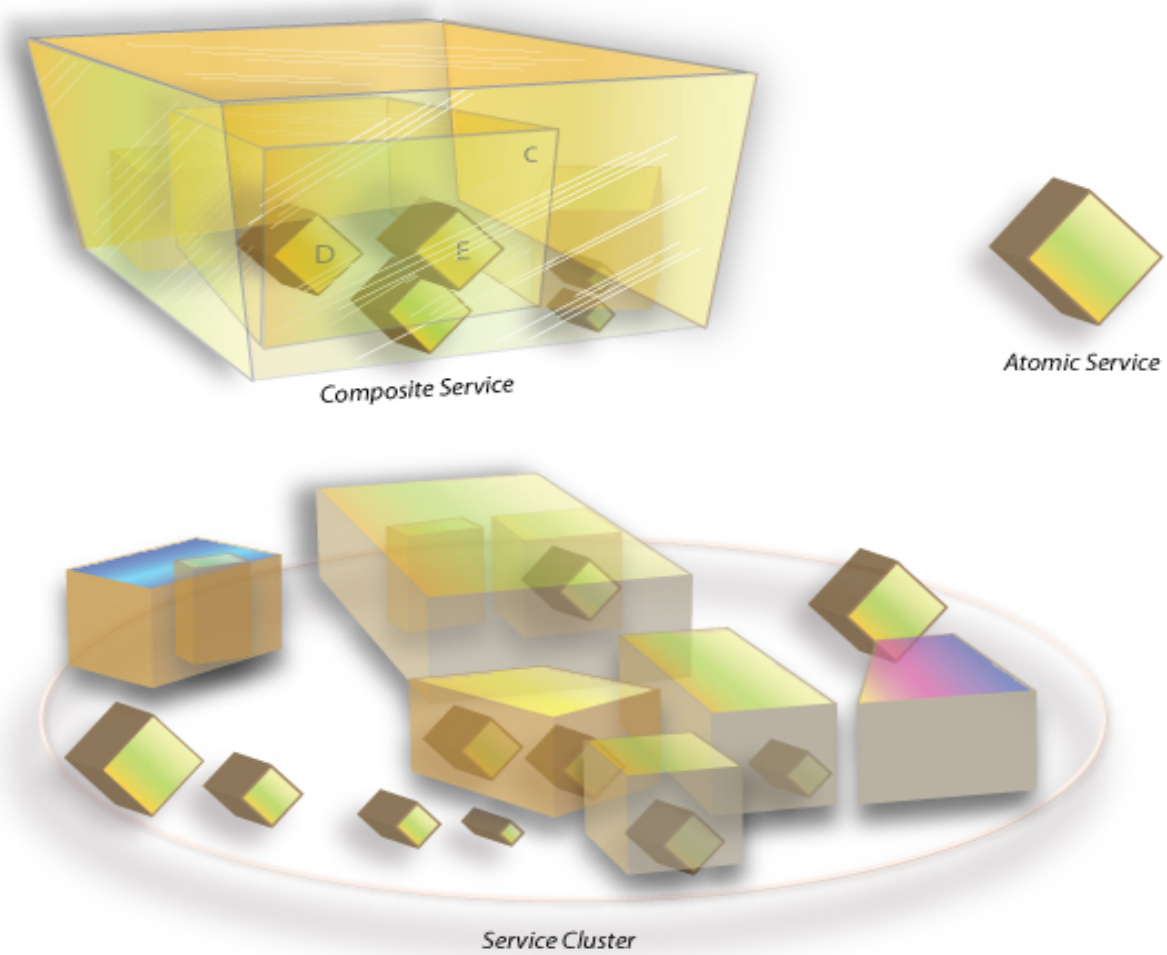
Decommission – retiring and terminating execution

Demotion – reducing functionality and reuse, and limiting budget allocation

No Change – Service continues to operate in its current state



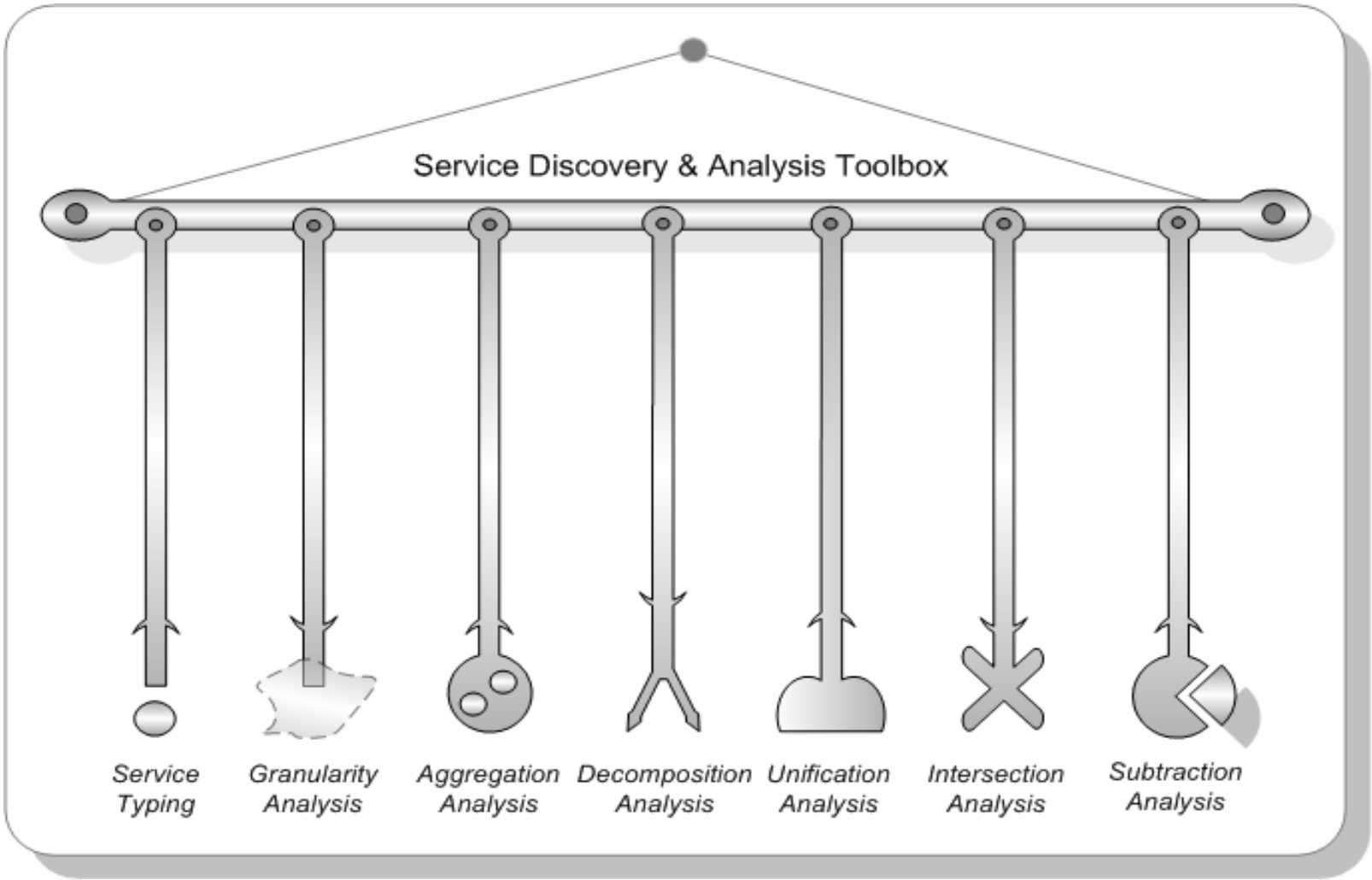
Service Structures



Service-Oriented Discovery & Analysis

Service-Oriented Analysis Modeling

Service Discovery & Analysis Toolbox



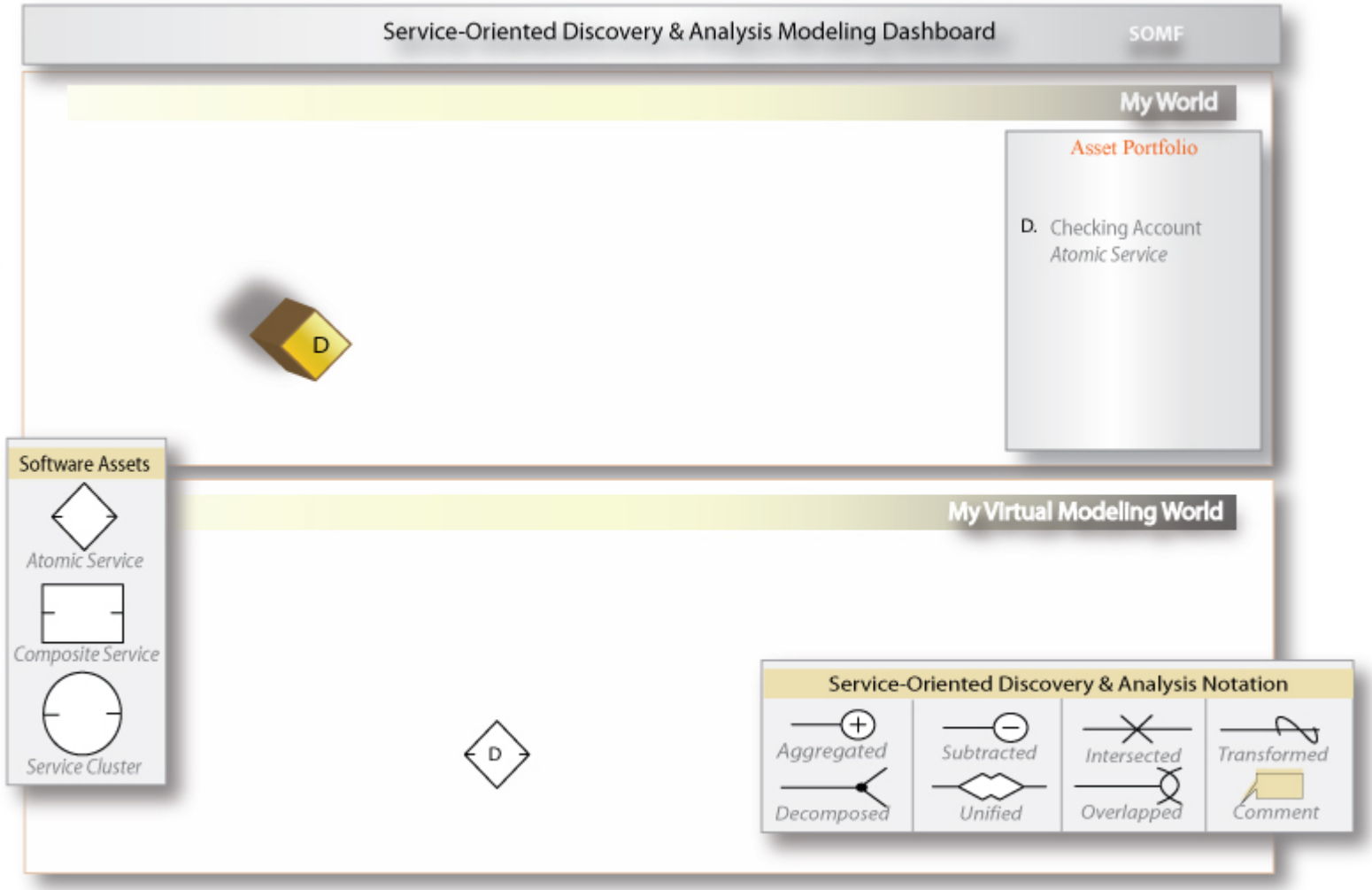
Modeling Analysis Services

It's Time to Play!

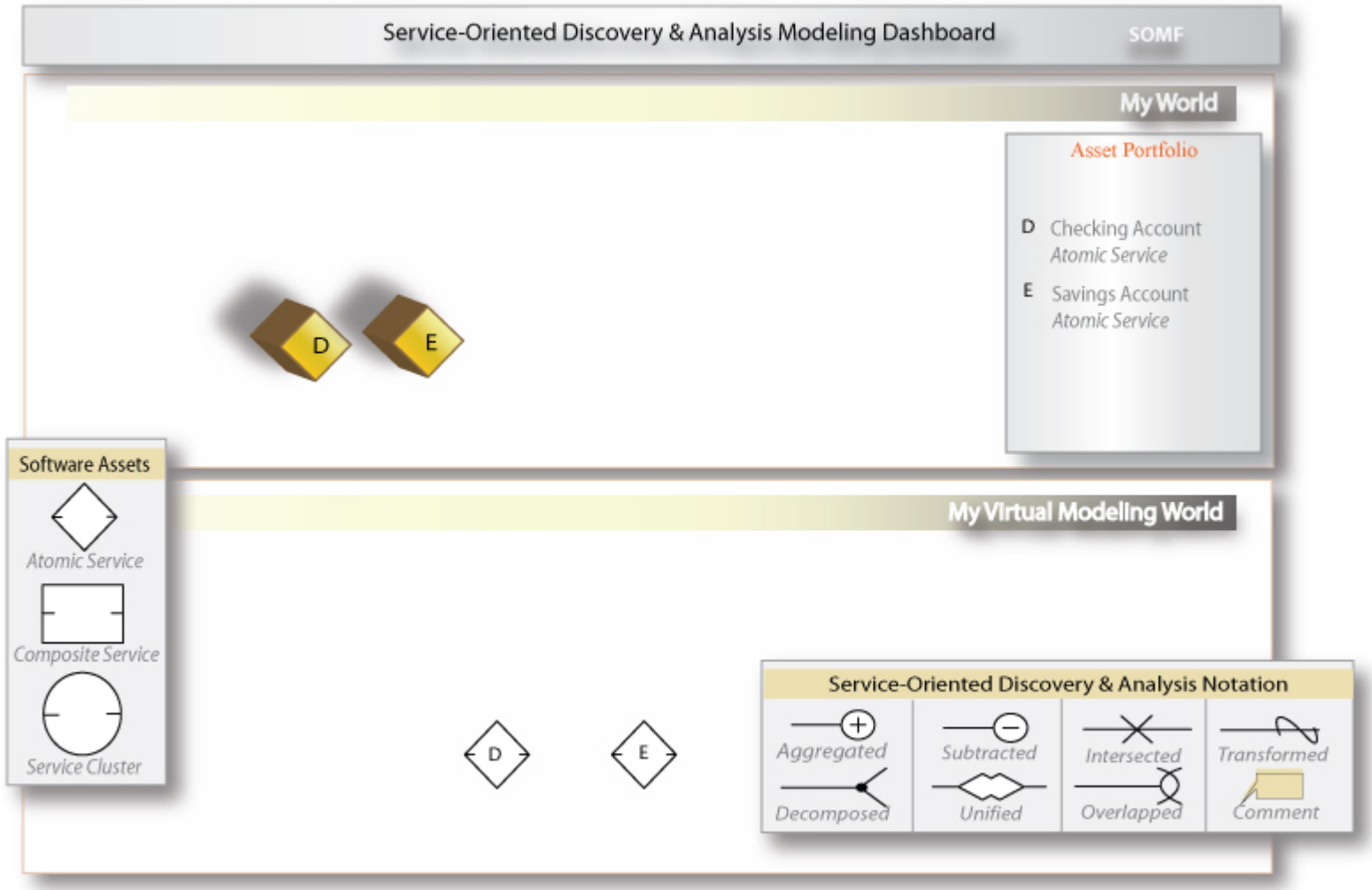
Revealing a Service Ecosystem…

- Understand Service Evolution & Metamorphosis
- Understand Service-Oriented Development
- Understand Service Life Cycle
- Understand Service-Oriented Asset Management
- Understand Service-Oriented Governance
- Understand Business & Technological Traceability
- Record Analysis Decisions & Train of Thought

I have always wanted to own a bank. So my initial step was to provide Checking Account offerings to my first clients…

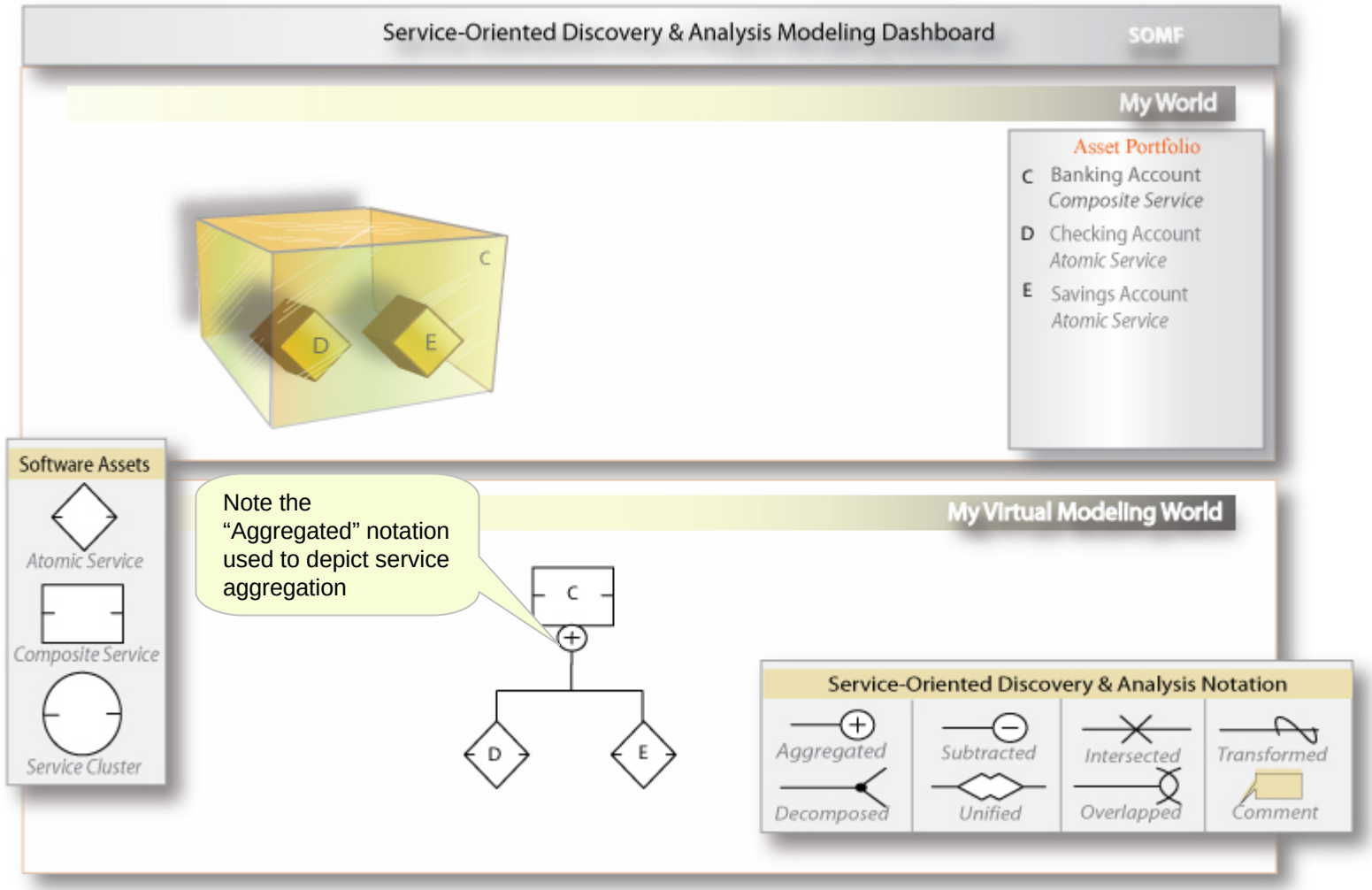


But my clients demanded more than a Checking Account service. I added a Savings Account service to my line of business!



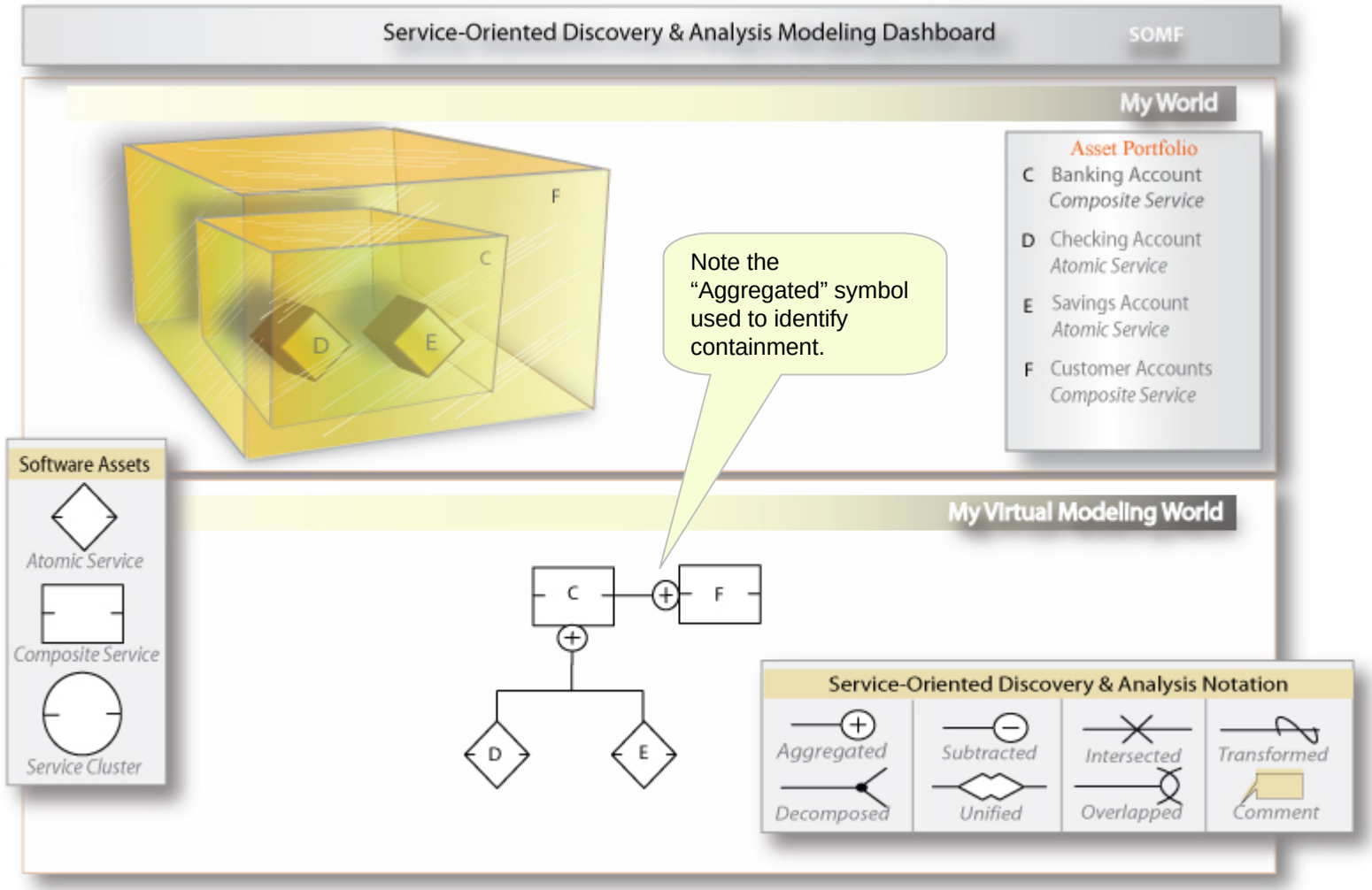
A Service-Oriented Composite Structure

To further generalize my business and expand it to other territories, I grouped these services under the name Banking Account Service, so in the future I can add more banking services…



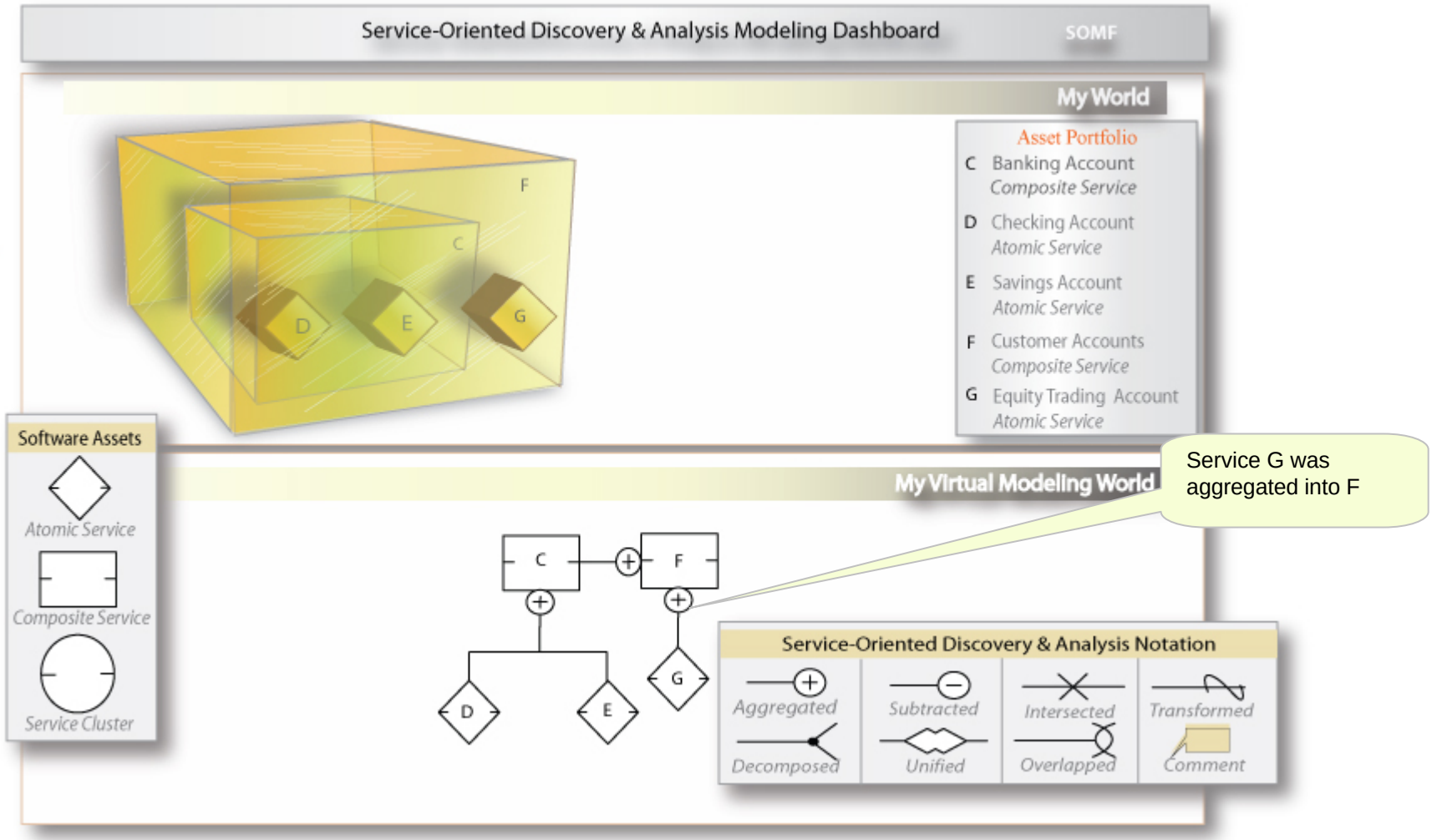
Composite Structures are Hierarchical Formations

Here I even suggested to accentuate Customer as the most important aspect of my business. Thus, I added Customer Accounts offerings to provide customer support, internet access, and more.



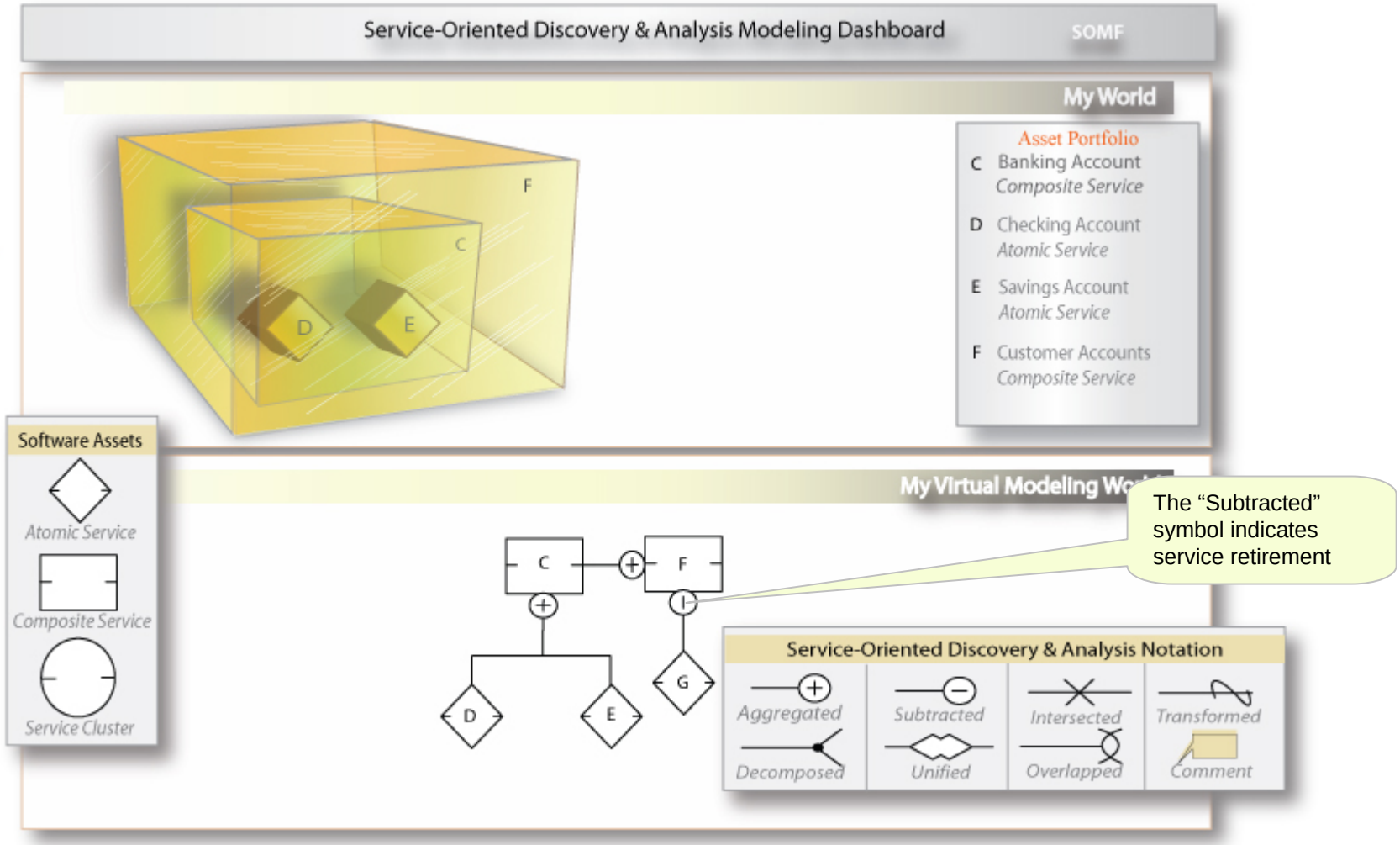
Composite Structures Are Aggregated Formations

And finally I was able to provide a small Equity Trading Account Service to augment my business offerings!



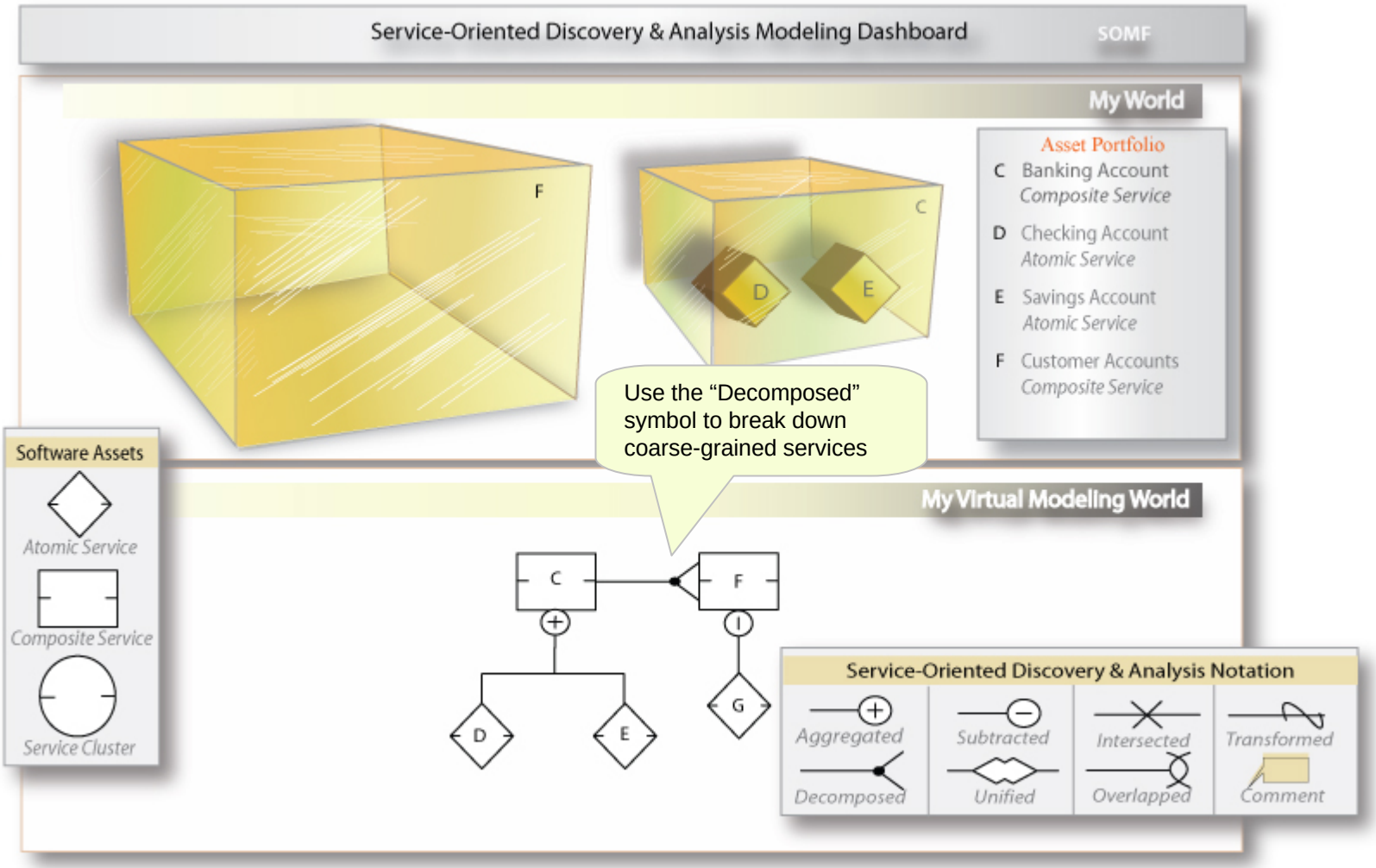
Subtraction Operations Are all about Elimination of Assets!

But when a recession hit the street, people diversified their investments, and moved their attention to Fixed-Income investment opportunities. My business suffered a great loss! Thus I instructed to retire the Equity Trading Account service.



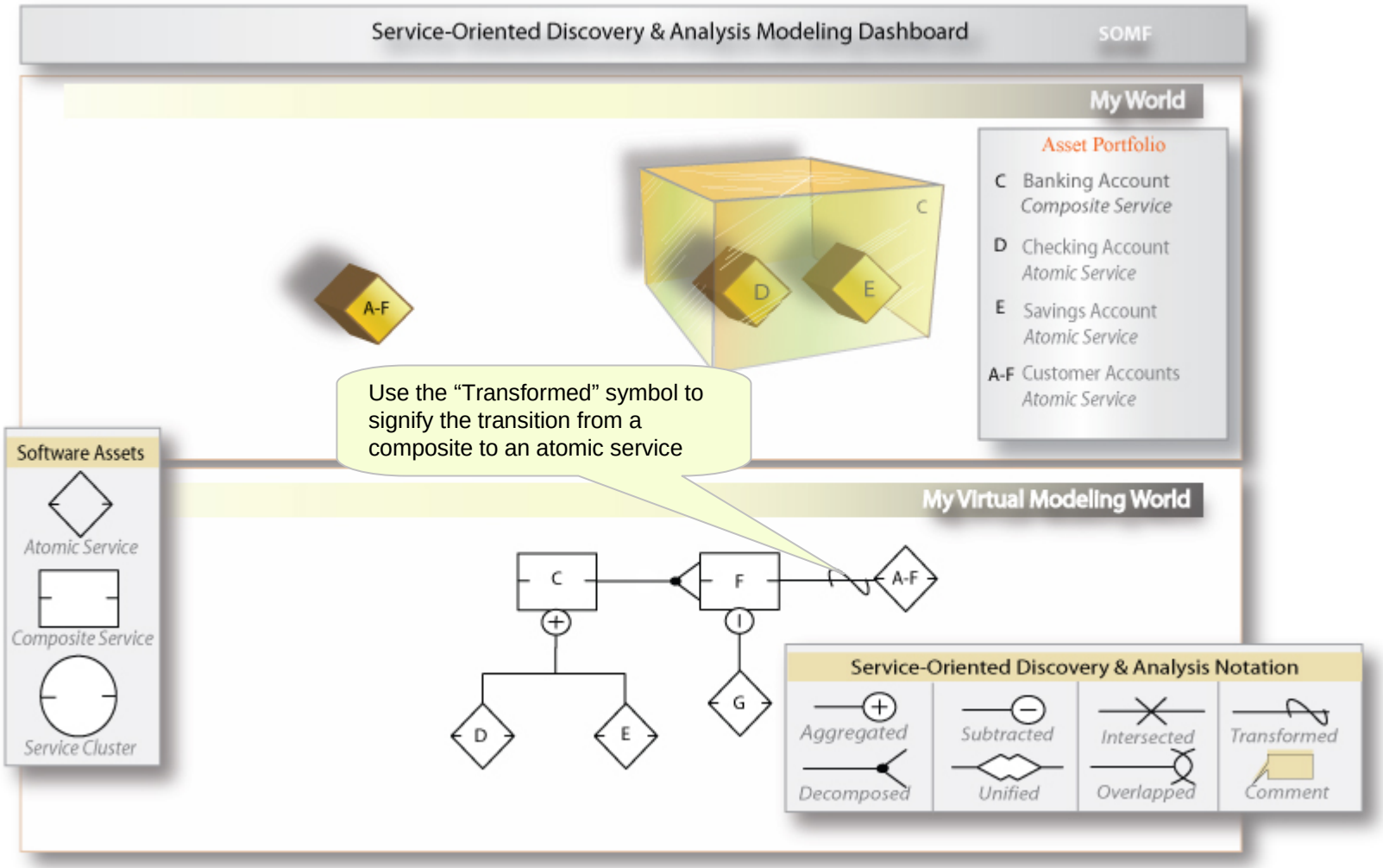
Software Asset Consolidation is on the Horizon! We Start with Service Decomposition…

Just as every good business, it was the time to reorganize! It seemed logically that the Customer Accounts service should be consolidated with the Banking Account service. So what do we do next?



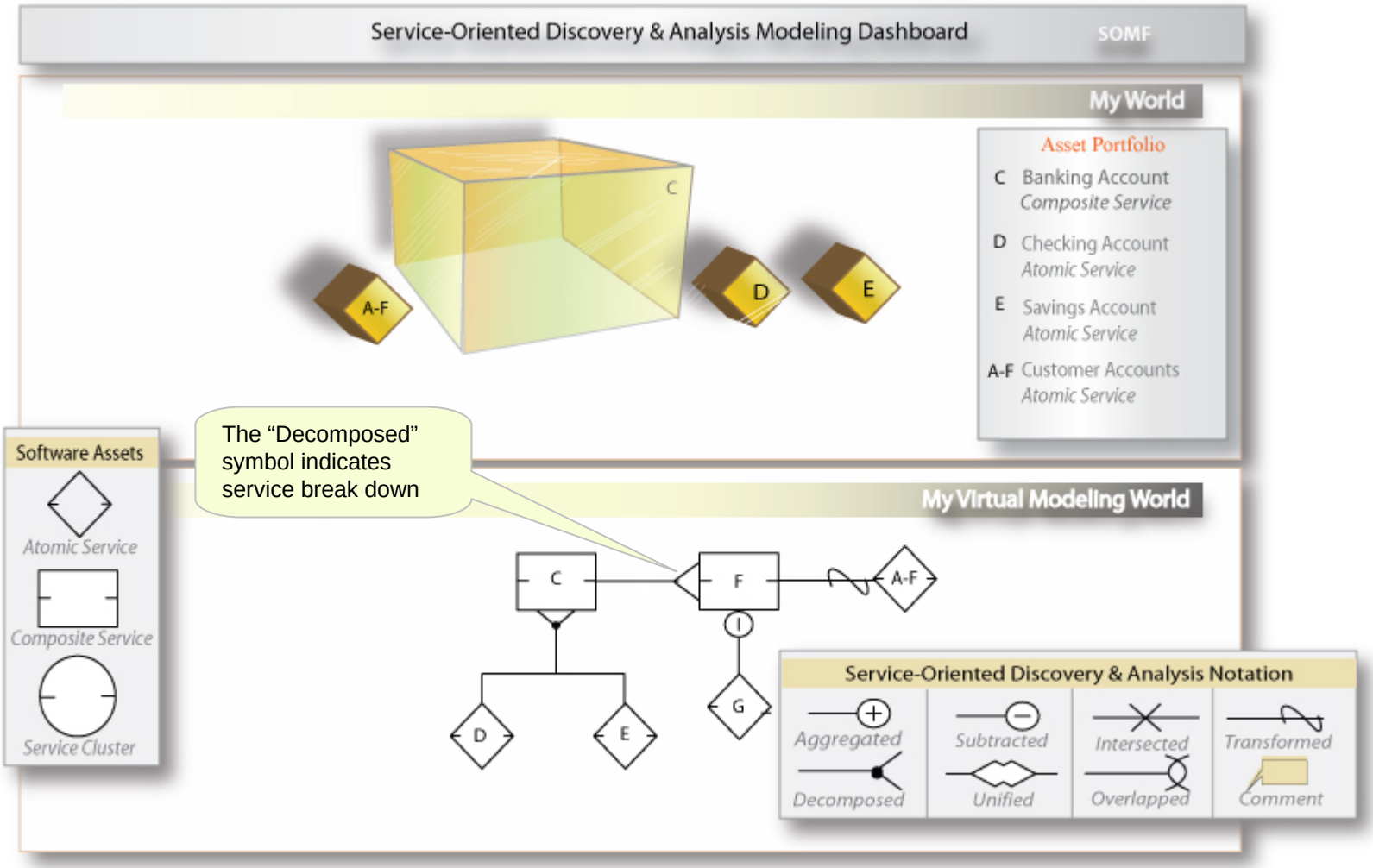
Consider Decomposition and Transformation of Assets!

I ordered to demote the Customer Accounts service before merging it with the Banking Account service.



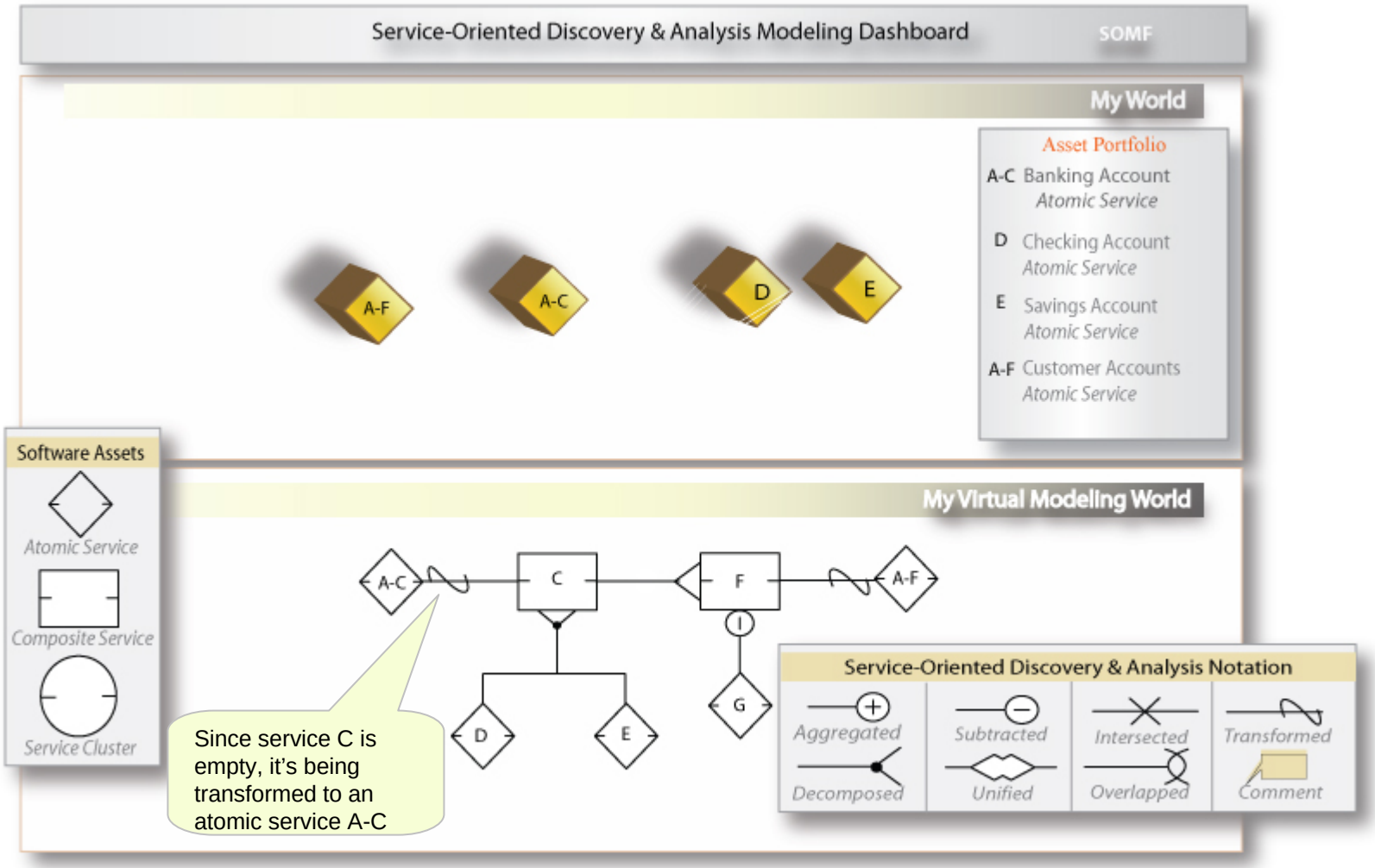
Continue with Decomposition of Assets!

And I also ordered the demotion of the Banking Account service!



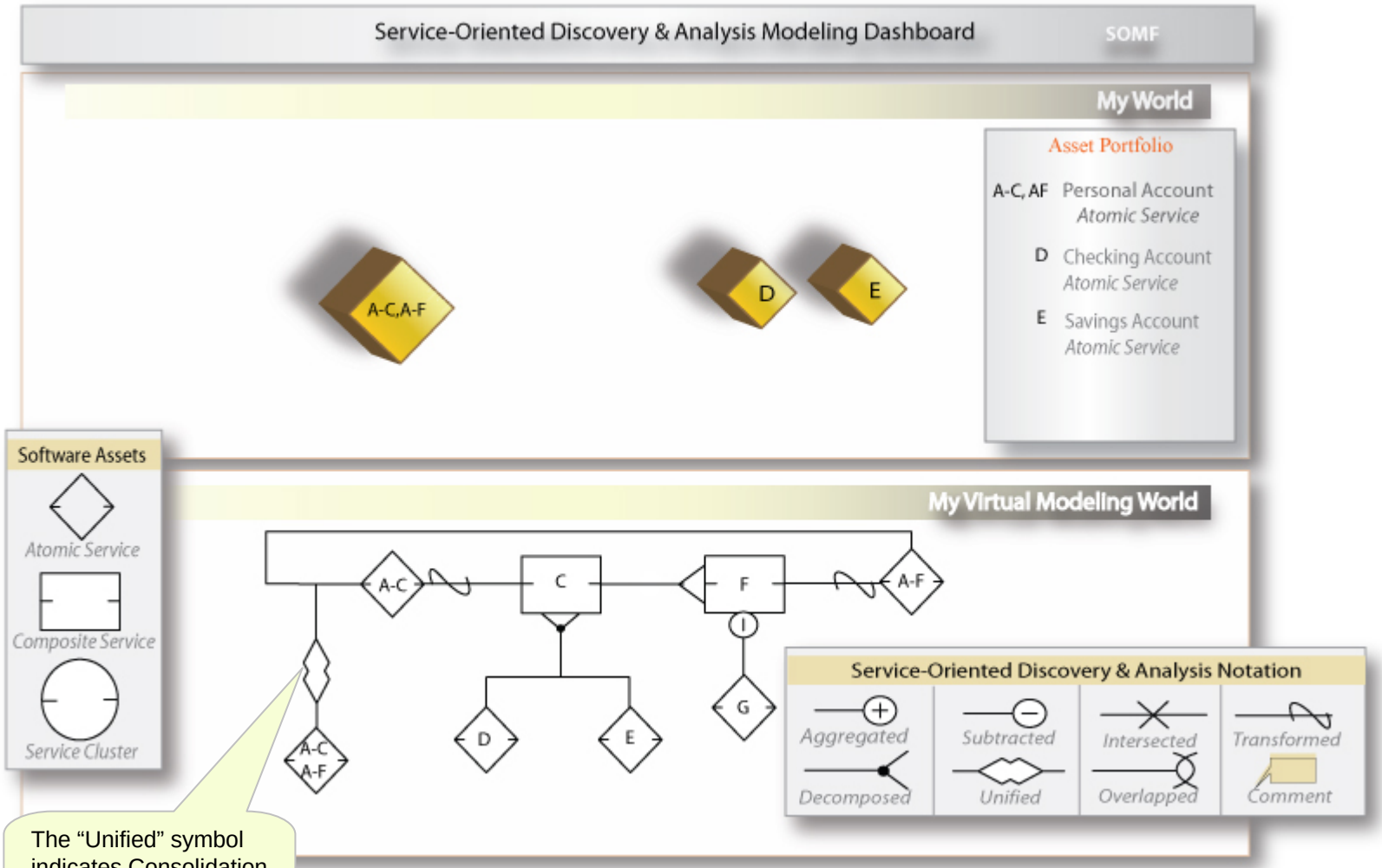
Continue with Transformation of Assets!

The Banking Account service was demoted. At this point, we were ready to consolidate….

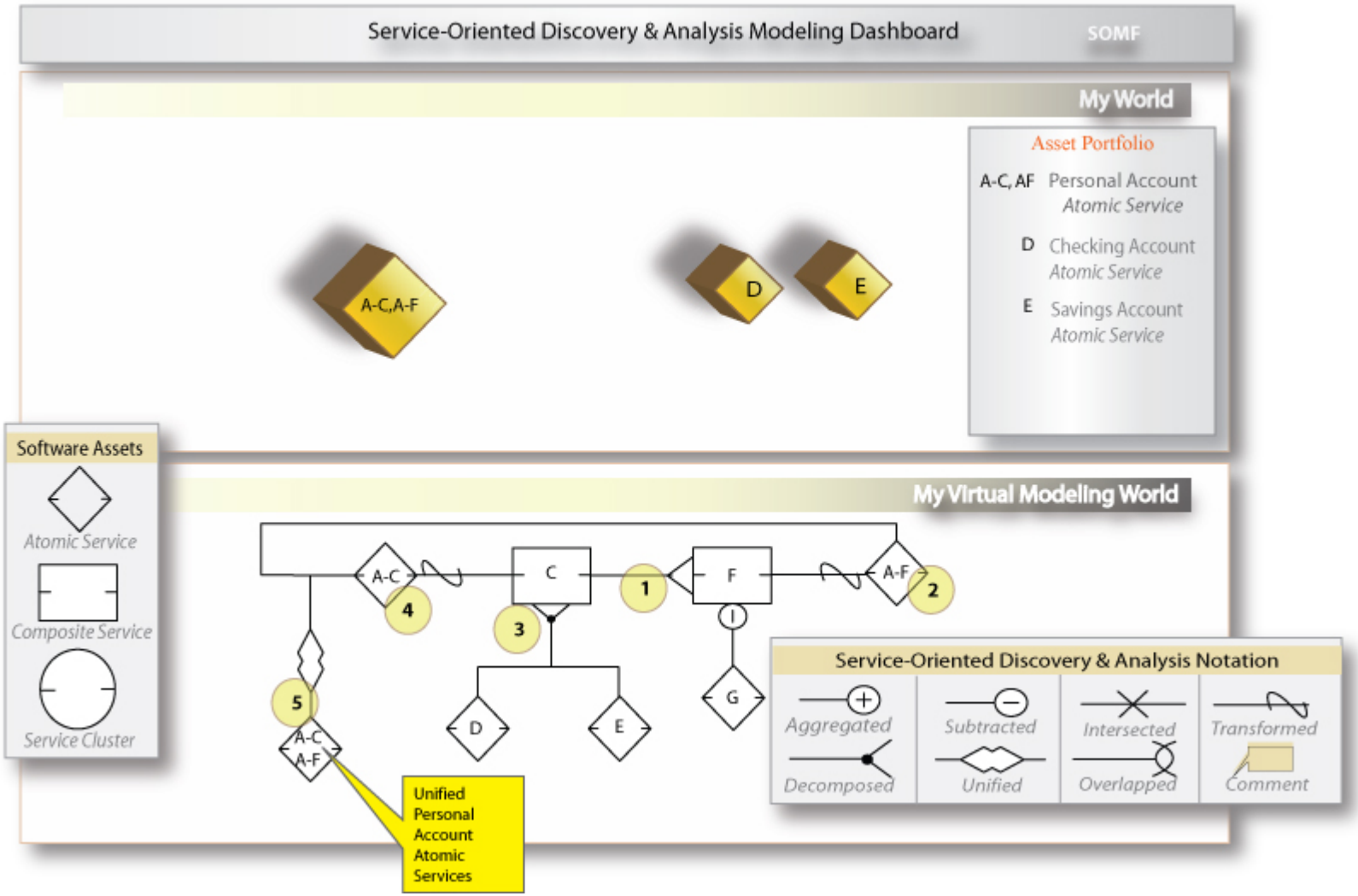


Unification of Atomic Structures

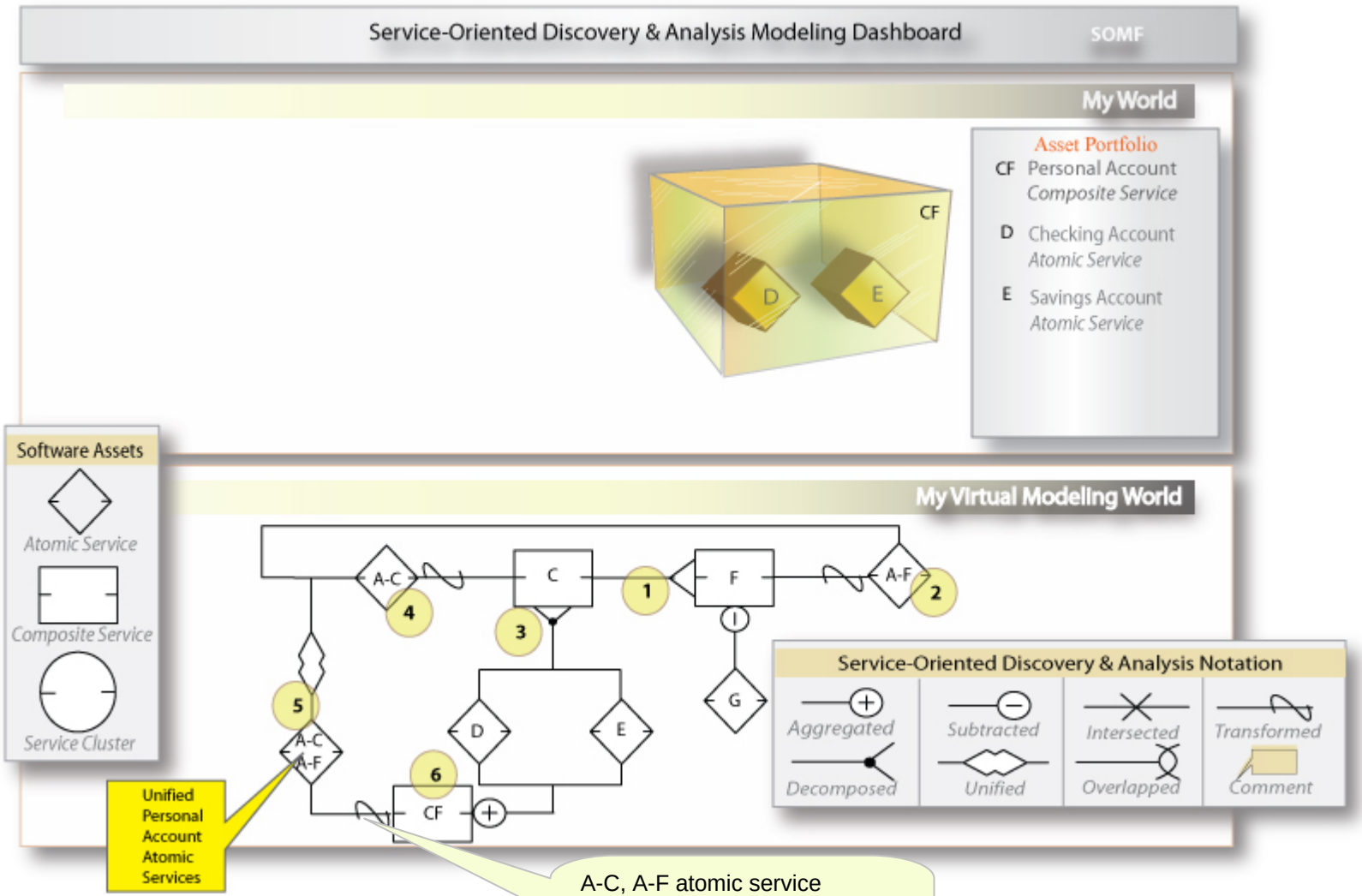
We finally consolidated these two service offerings in anticipation to even merge more assets.



The "Unified" symbol indicates Consolidation of services



Aggregation of Services Combines Related Software Entities

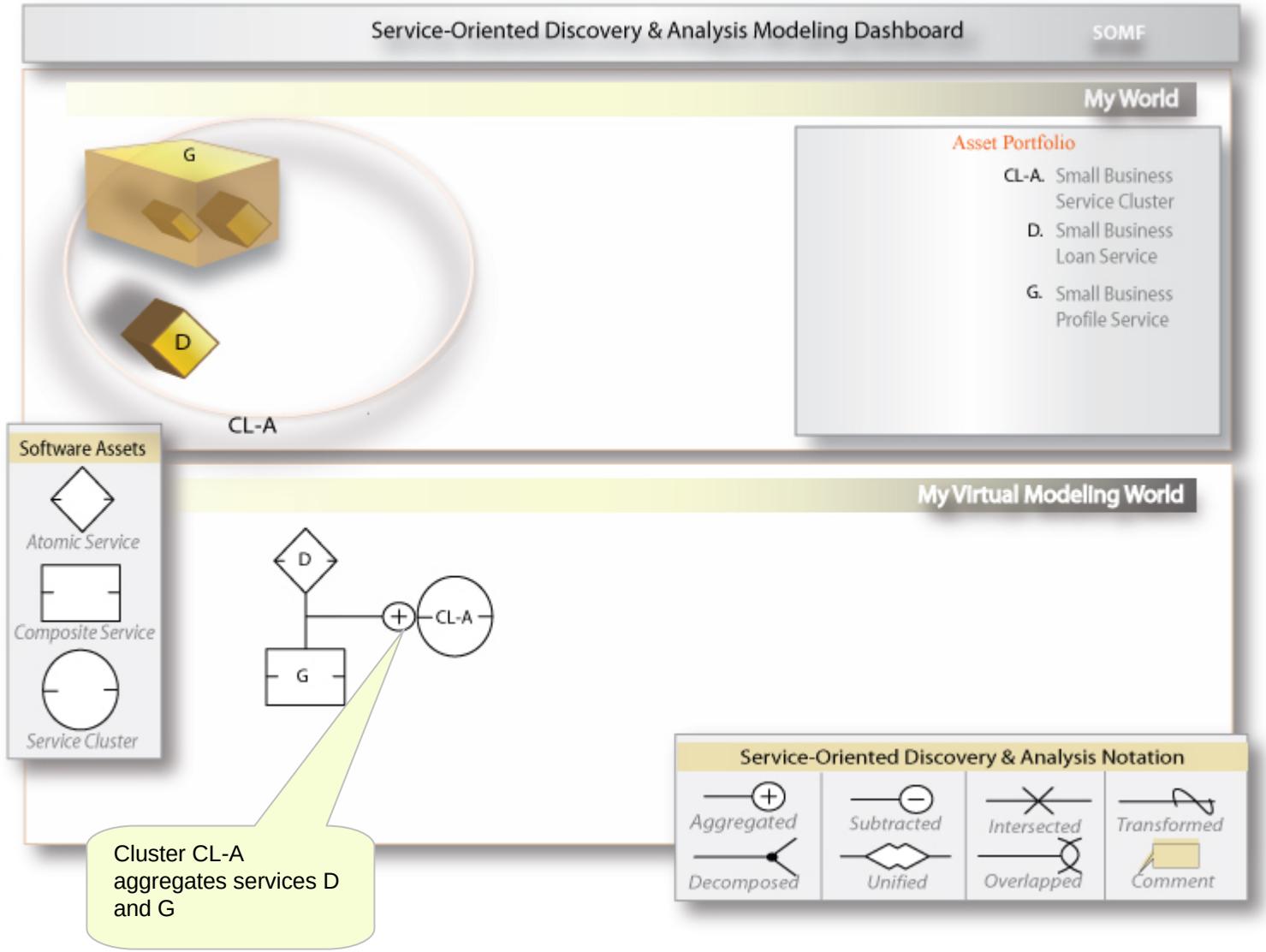


OK, It's Time to Play Again!

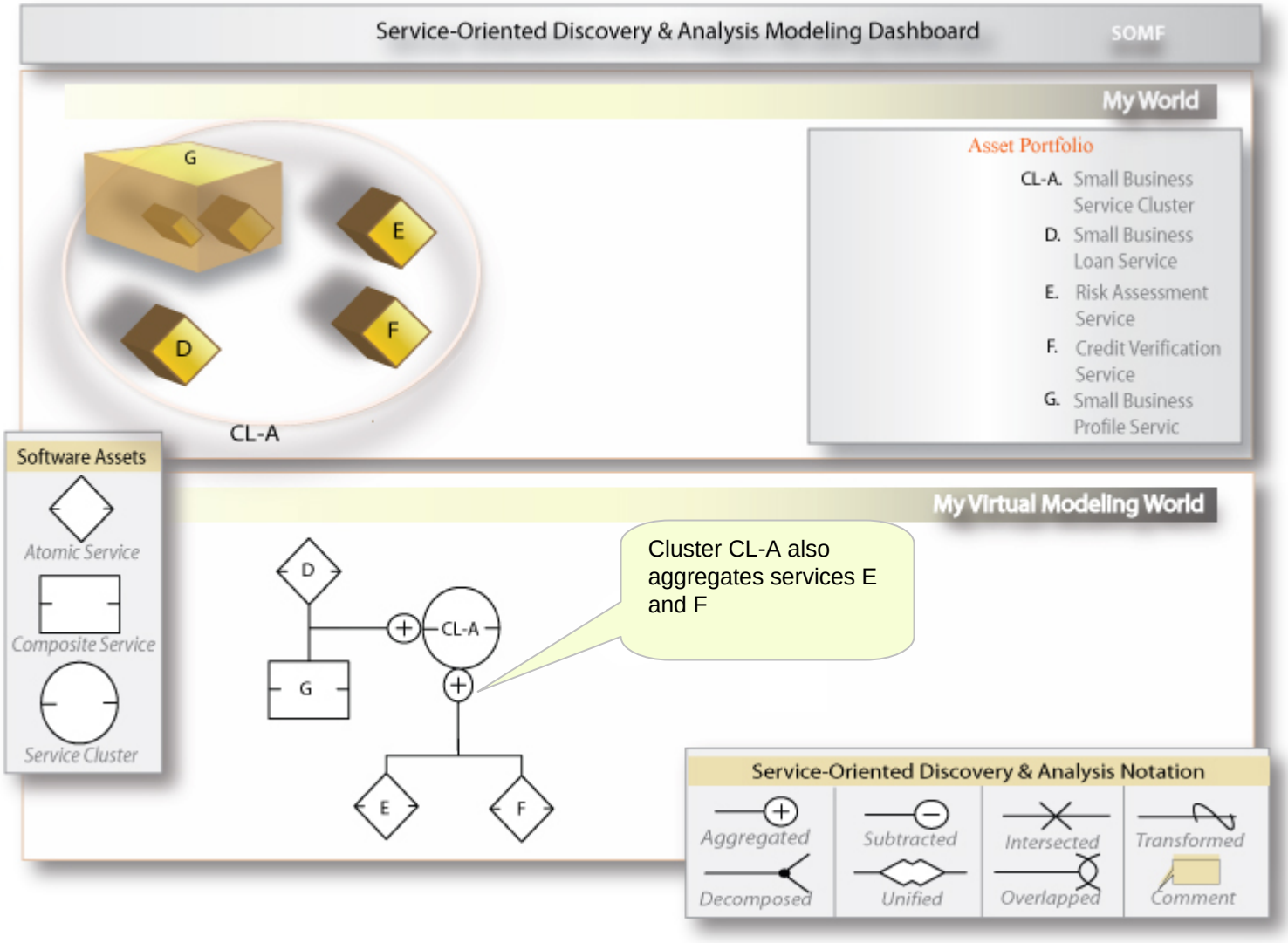
Revealing a Service Ecosystem…

- Understand Distributed Formation
- Understand Interoperability
- Understand Reusability
- Understand Service Relationship

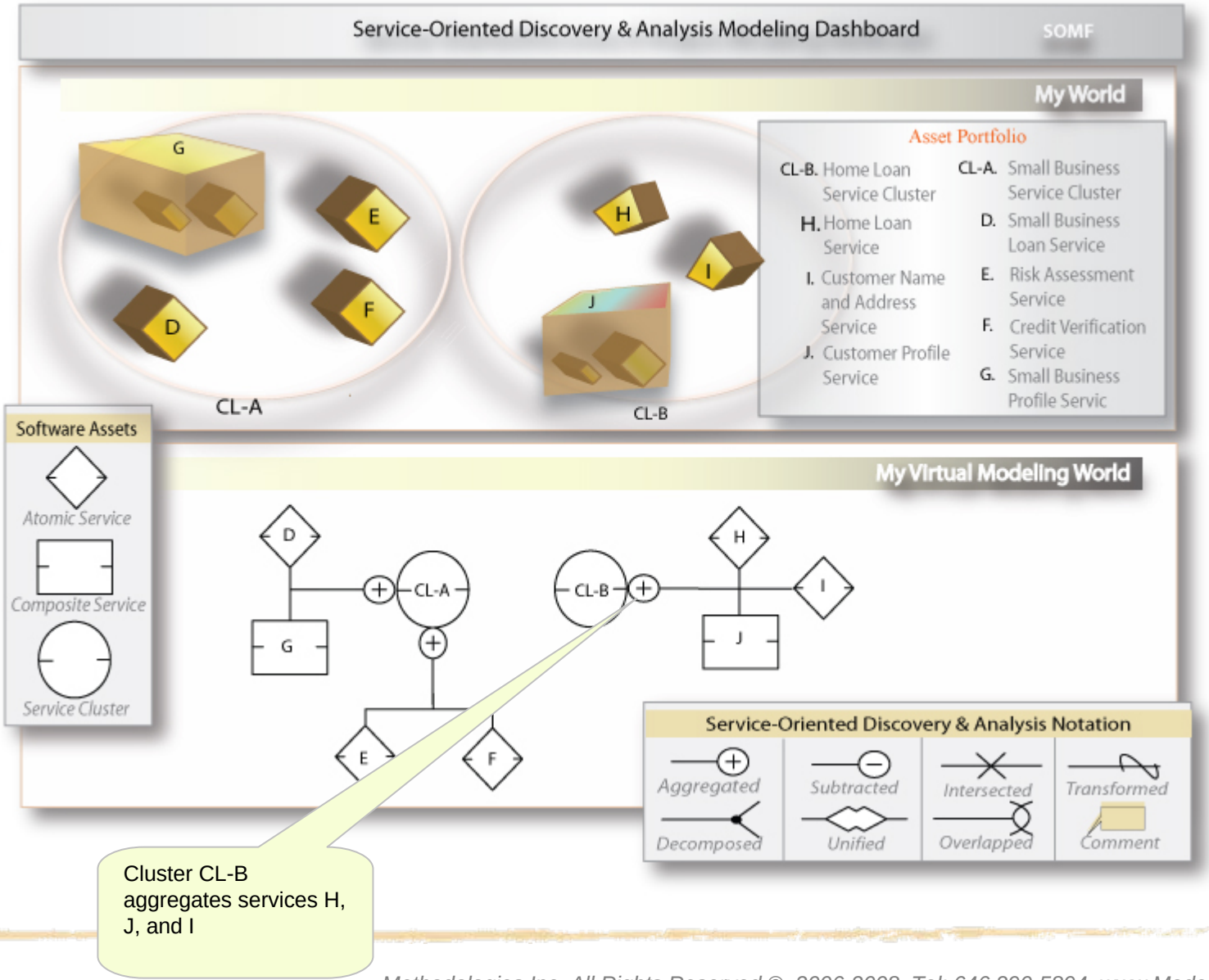
Creating Cluster Formations



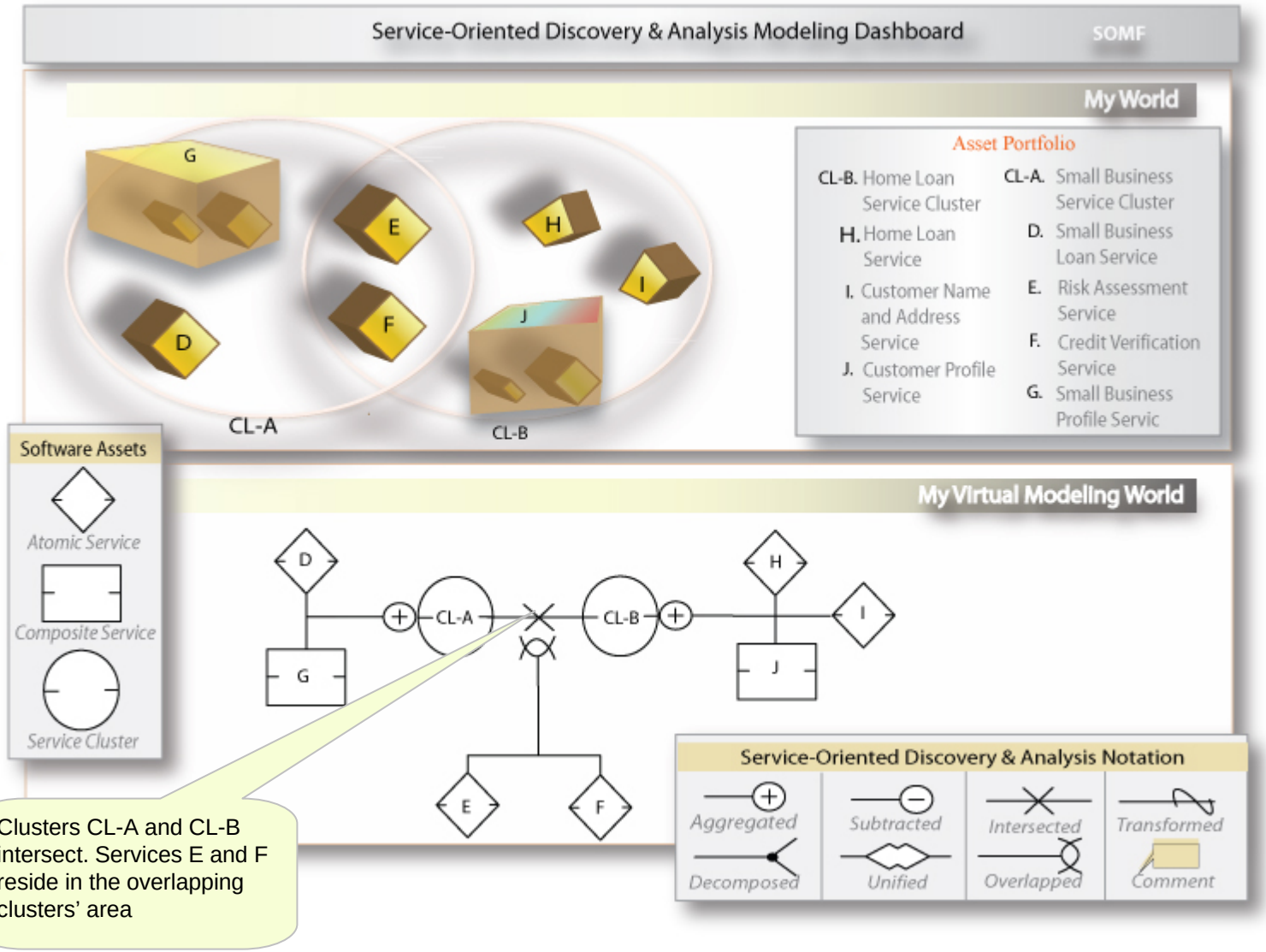
Aggregating Services by Employing Clusters



Exploring Service Commonalities

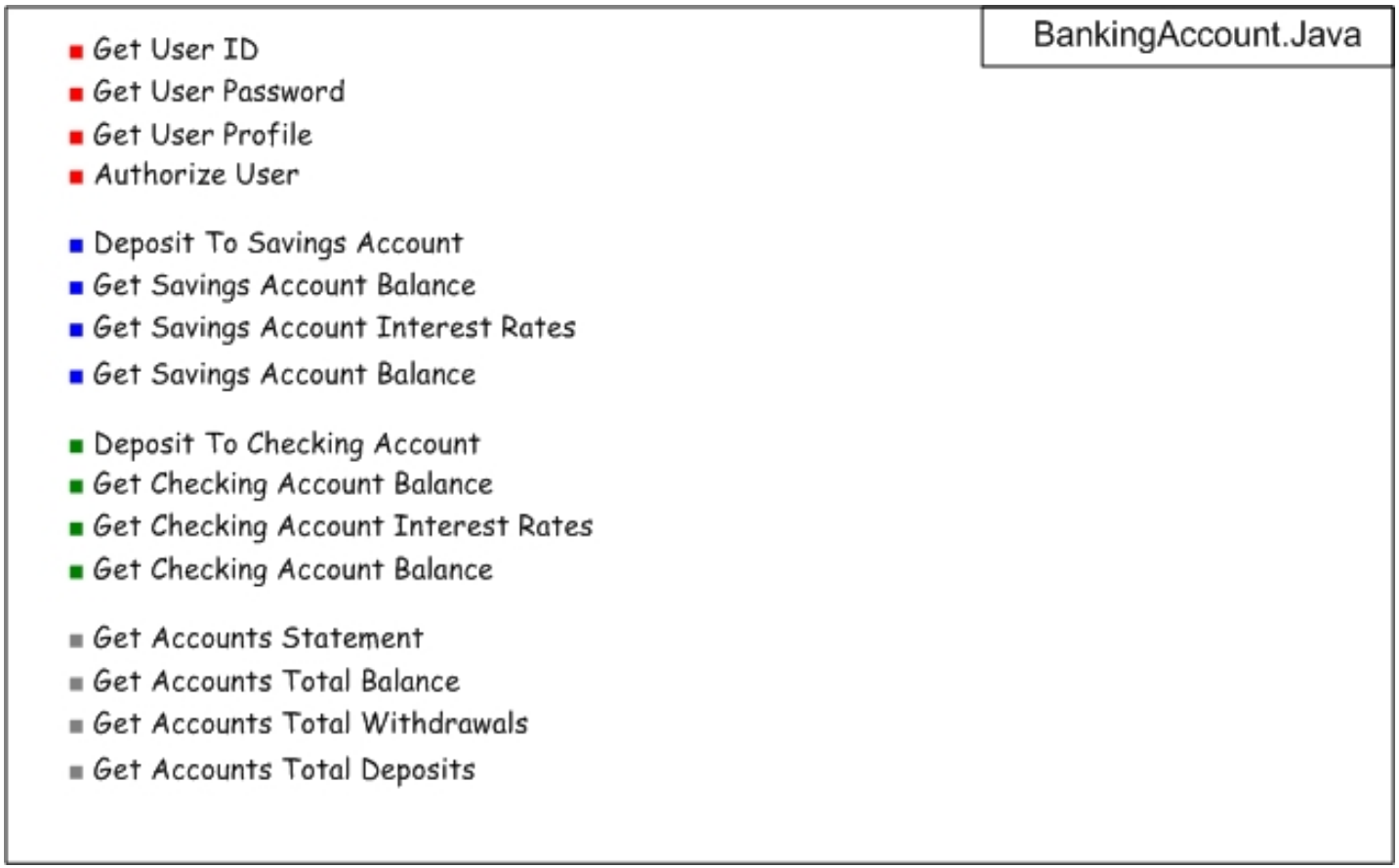


Cluster CL-B aggregates services H, J, and I



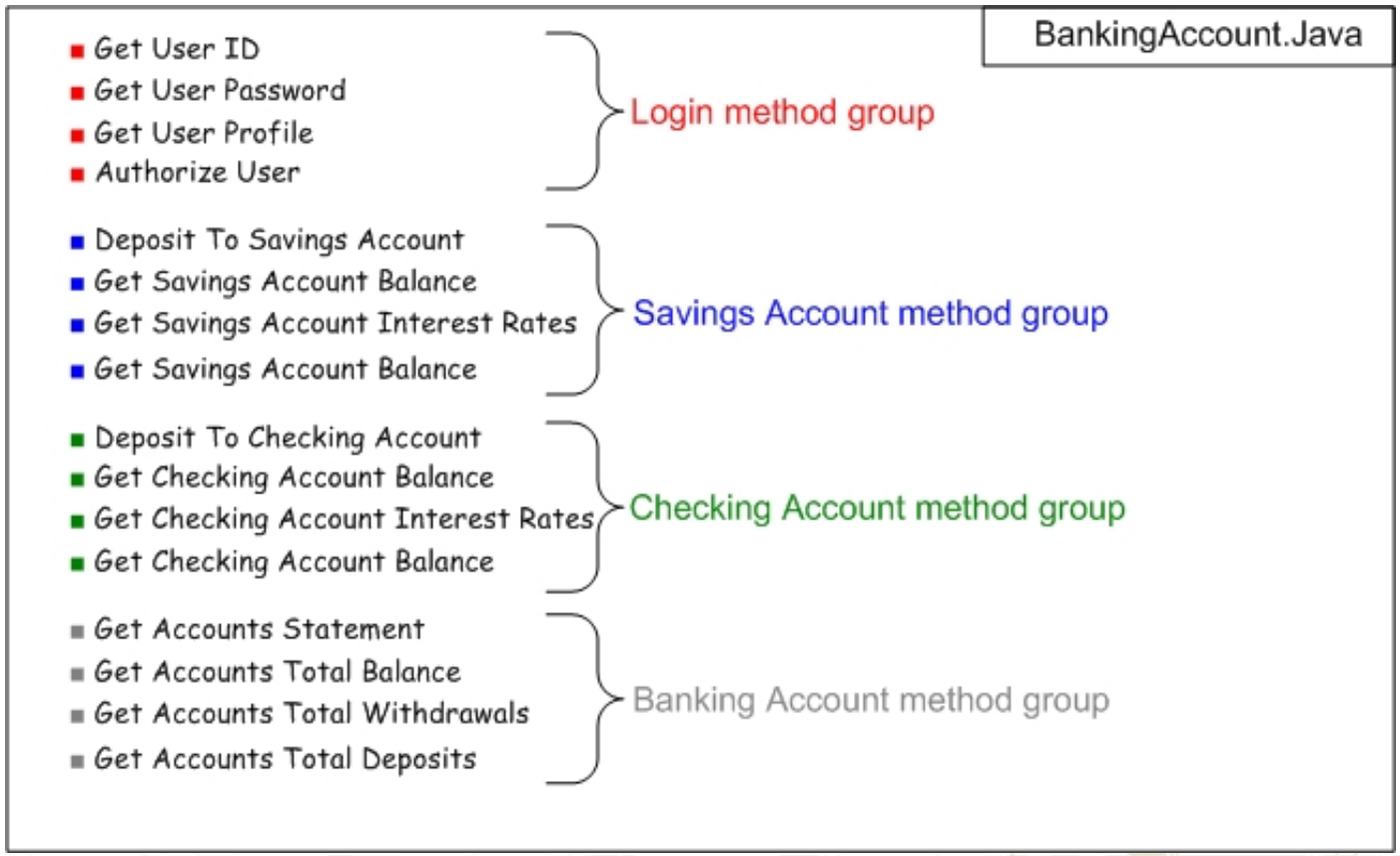
Another Example: Application Level Service-Oriented Analysis

Imagine a Java Program named BankingAccount.Java
that has 16 business activities that provide Banking Account services



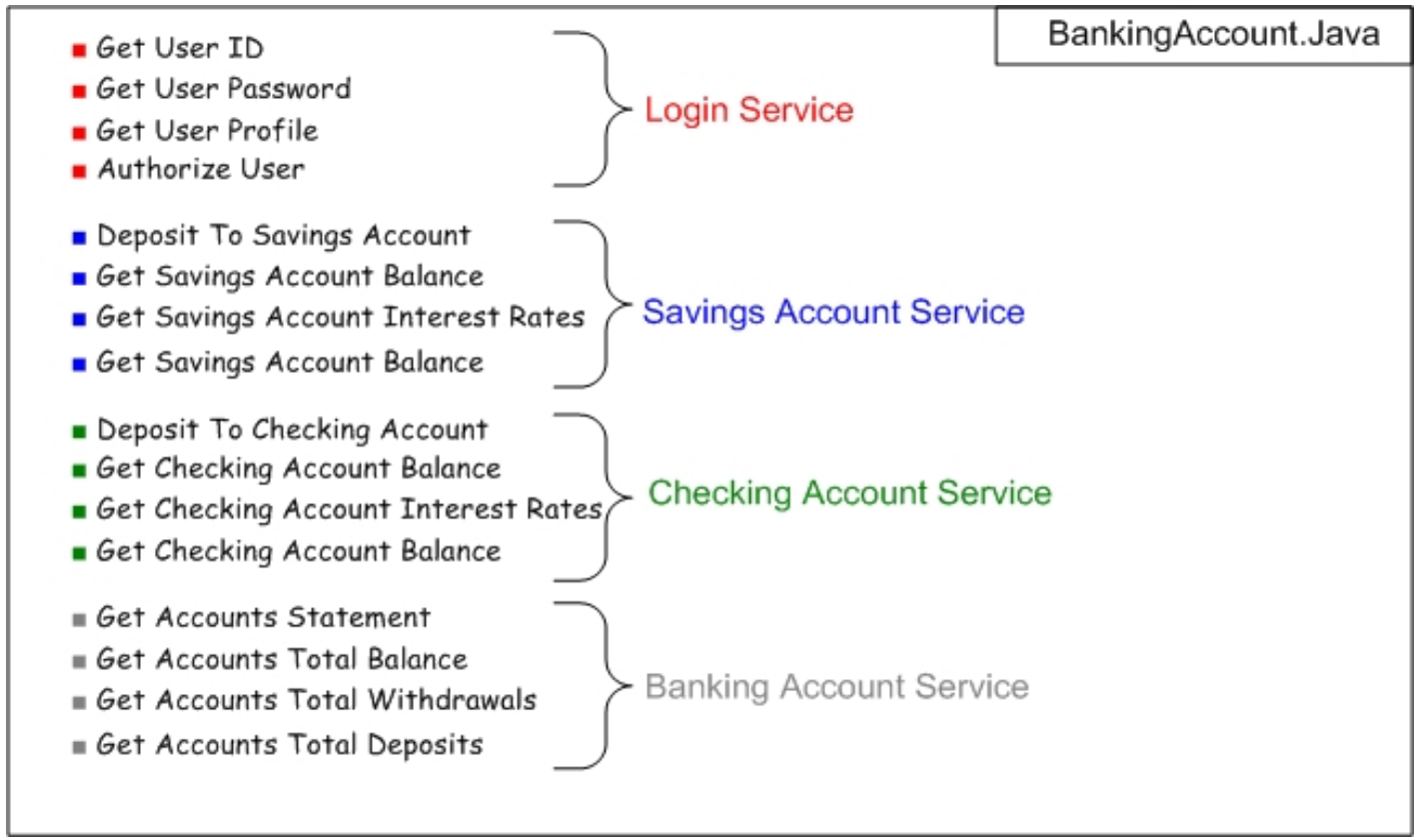
Wouldn't it be Easier to logically partition these methods into four distinguished groups?

1. Login method group
2. Savings Account method group
3. Checking Account method group
4. Banking Account method group

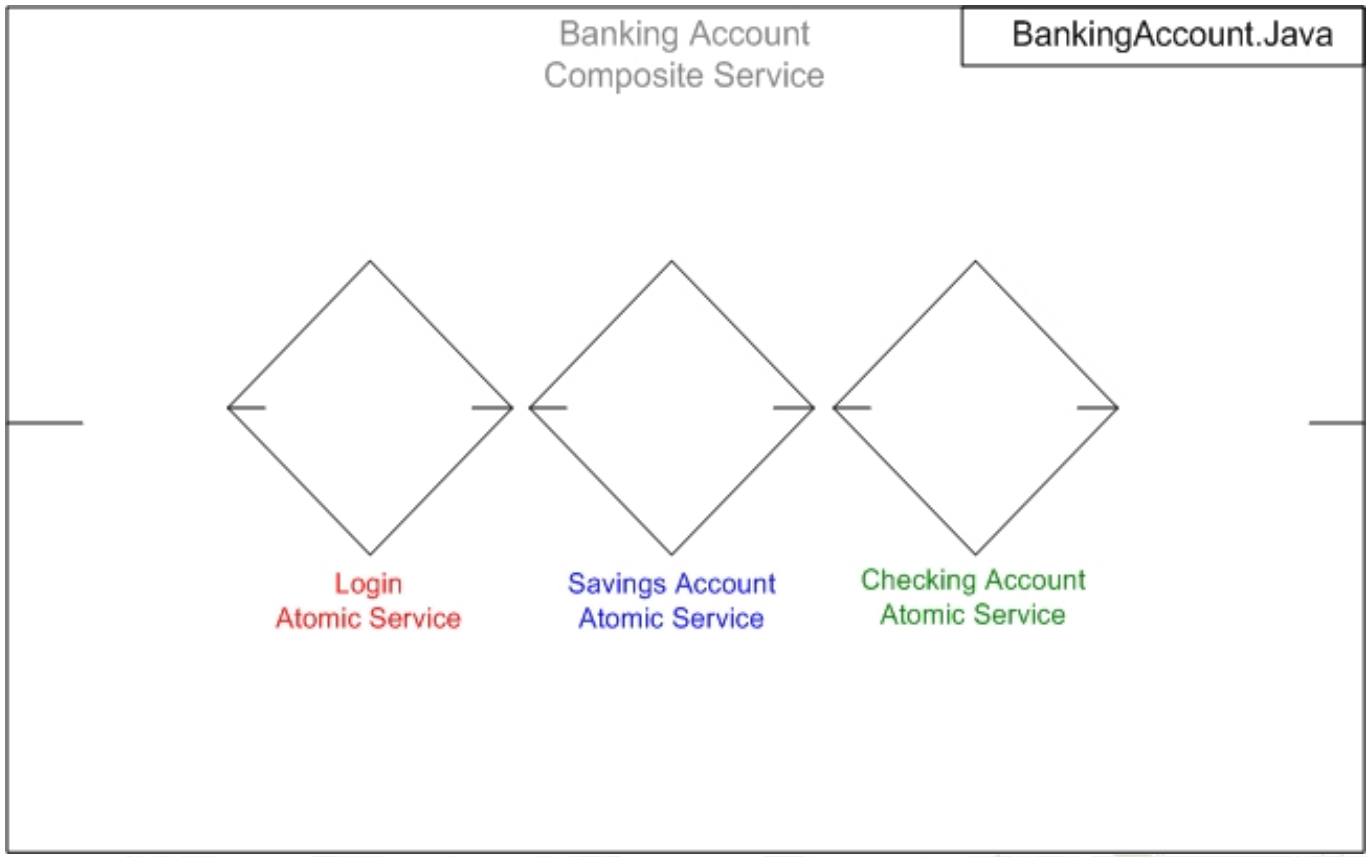


…And Wouldn't it be practical to regard each of these method groups as a service?

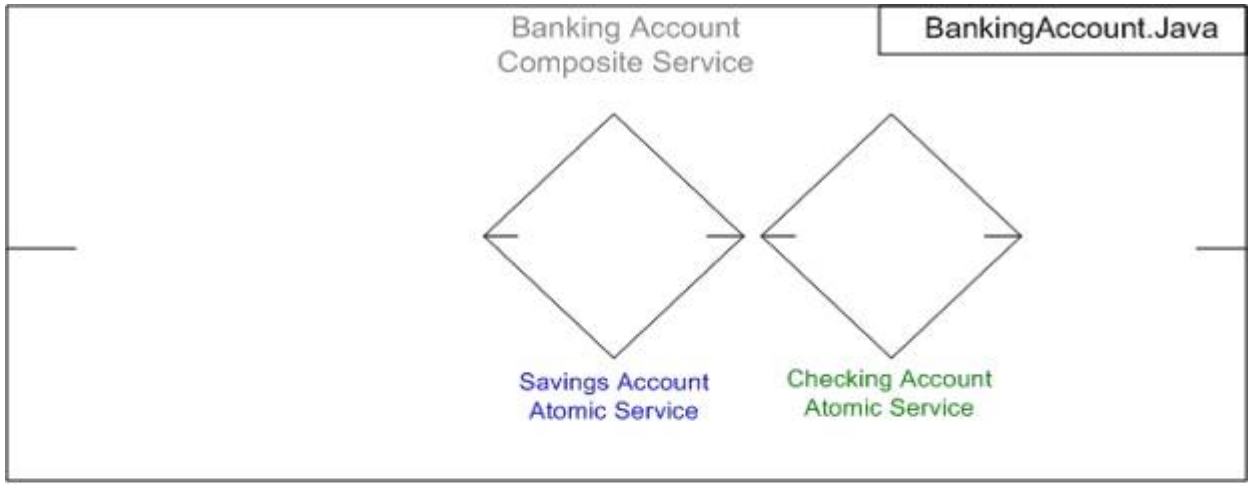
1. Login Service
2. Savings Account Service
3. Checking Account Service
4. Banking Account Service

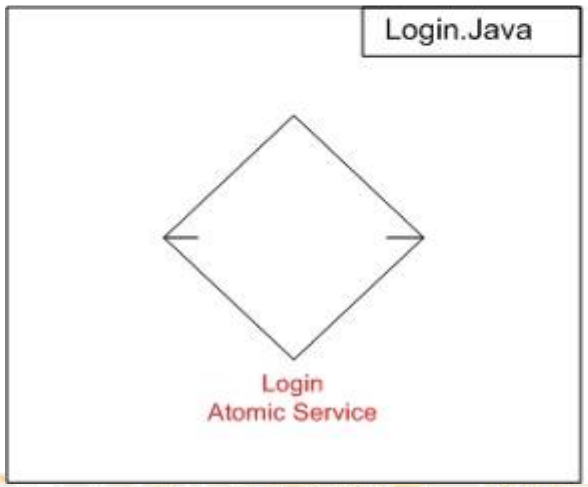


If this makes sense, we can visualize this formation as a composite service that contains smaller and finer grained services. The most generalized service, the Banking Account service that consists of general banking account activities (methods), is regarded as a composite service that aggregates smaller services (fined-grained), each of which is an atomic service (indivisible entity).

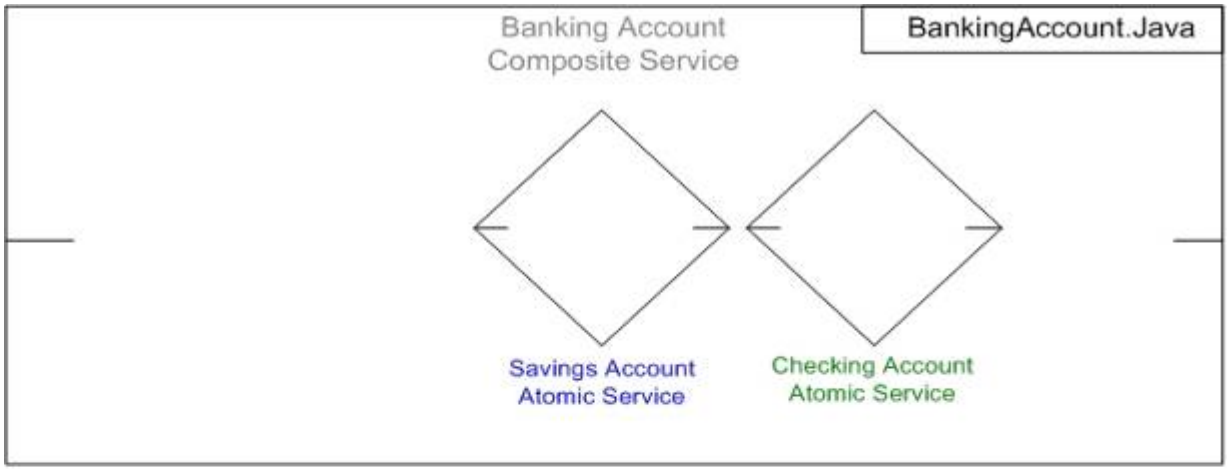


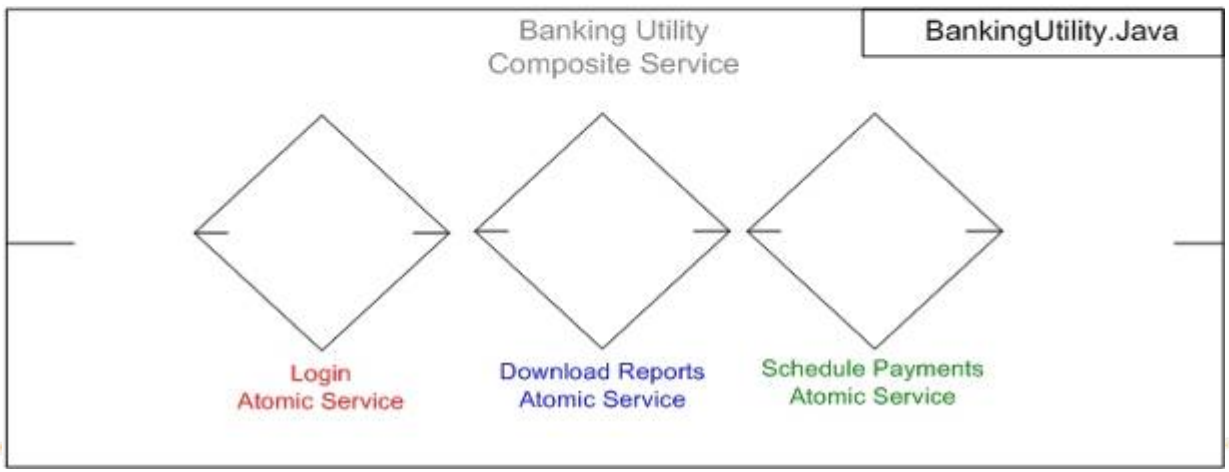
During your service-oriented analysis phase, you may want to decompose your Baking Account Composite Service, reduce its size and increase the reusability rate of the Login Atomic Service. The Login.Java is the program that executes the Login Atomic Service.





While analyzing your services, the Login Atomic Service may be a candidate for aggregation. You may want to include it in the already existing BankingUtility.Java program to join the other utility services that are aggregated into the Banking Utility Composite Service.



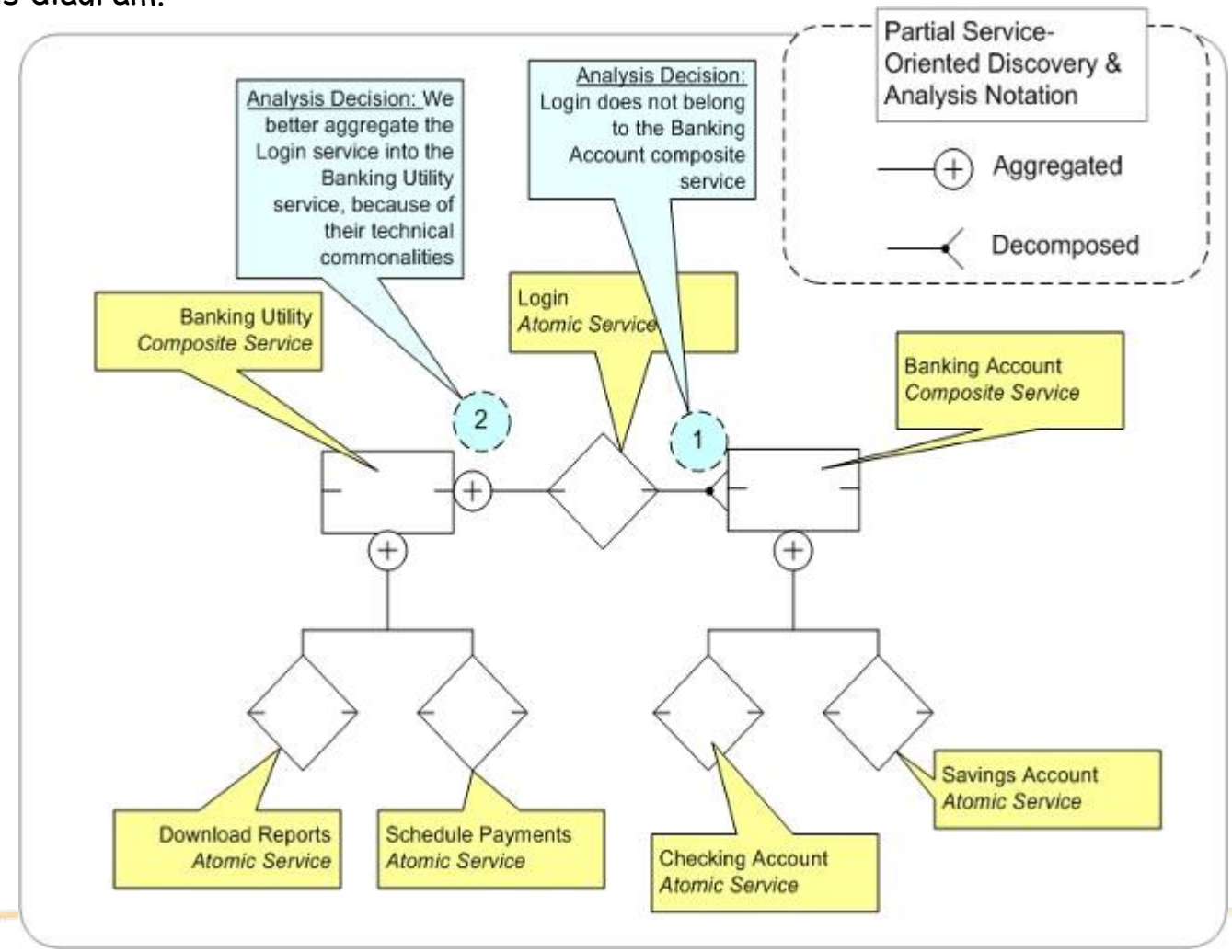


Service Analysis Process Traceability Perspective

Analysis Decisions are Your Company's Intellectual Property.
SOMF Can Assist You to Document
this Process and Your Train of Thought,
and Preserve Analysis Considerations

Analysis Process Traceability

The Service-Oriented Modeling Framework (SOMF) introduces a formal language that can be used to describe an analysis process. This approach advocates that you preserve and document the train of thought that influenced your analysis decisions. Note the sequence of events in the below service analysis diagram.

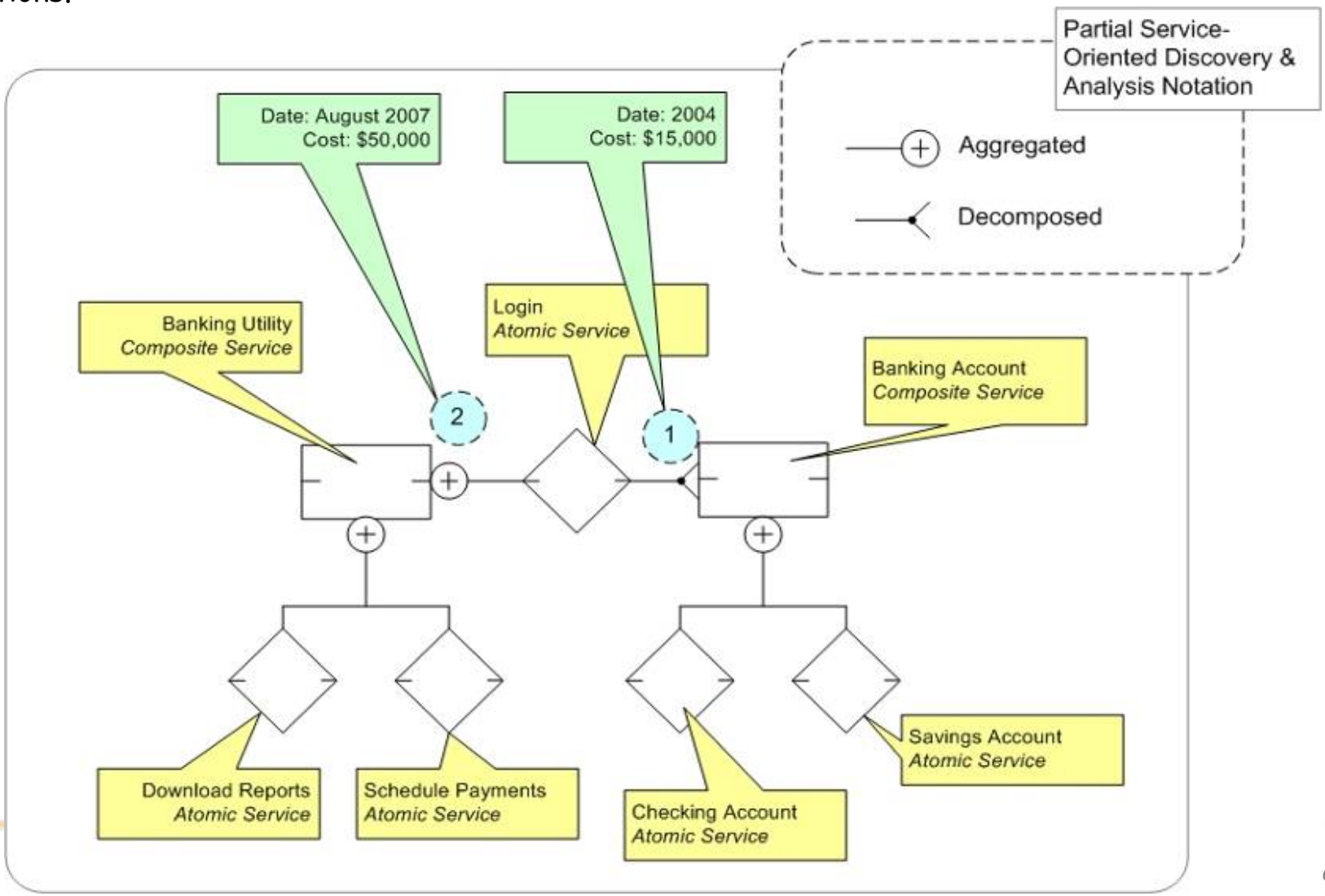


Business Traceability Perspective

SOMF Enables Business & Service Life Cycle Traceability

Business & Service Life Cycle Traceability

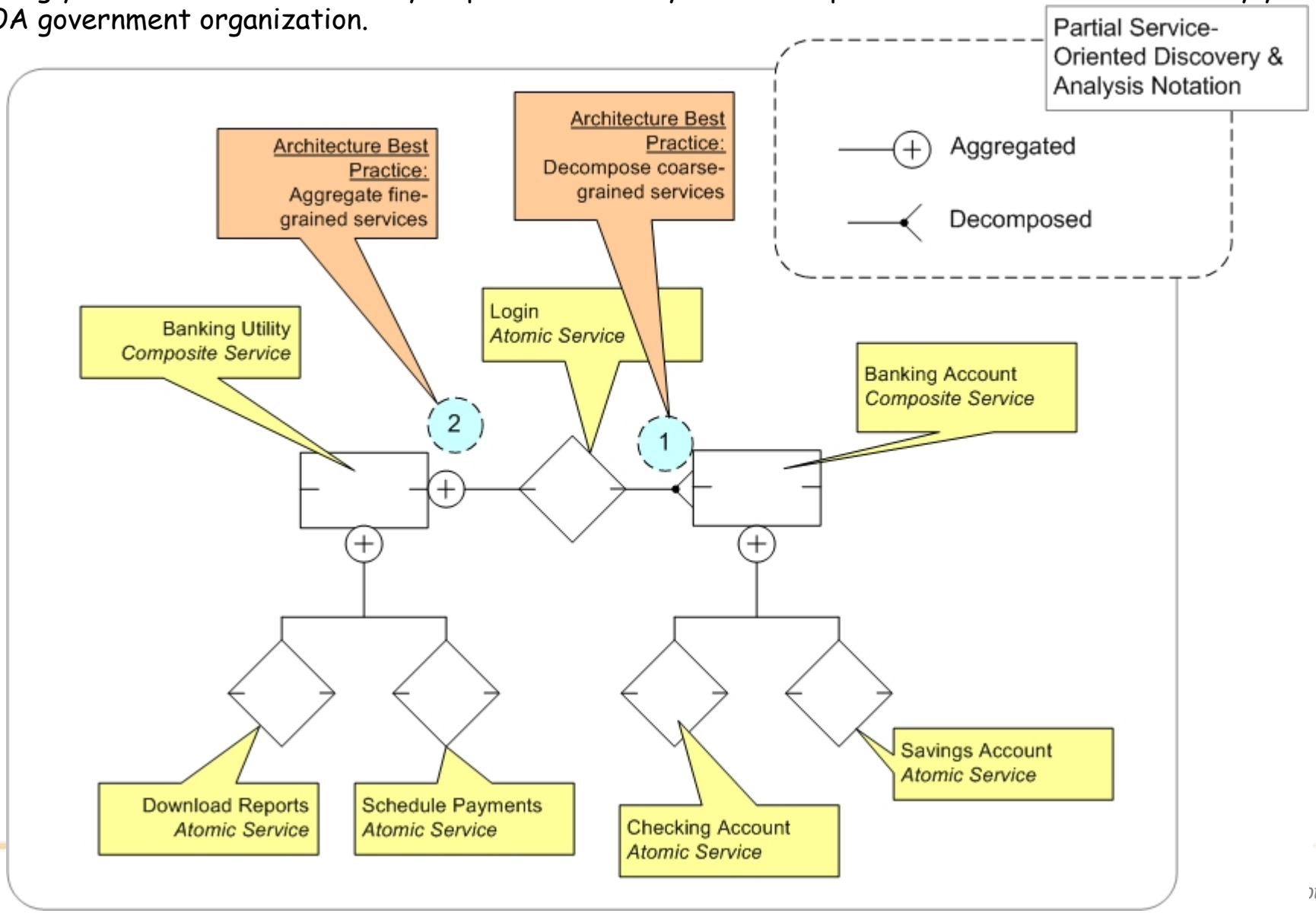
If you are describing a service life cycle you can even add next to each step the affiliated costs and execution dates. This can improve your future business traceability and enhance your future budget projections.



SOA Governance & Architecture Best Practices Traceability

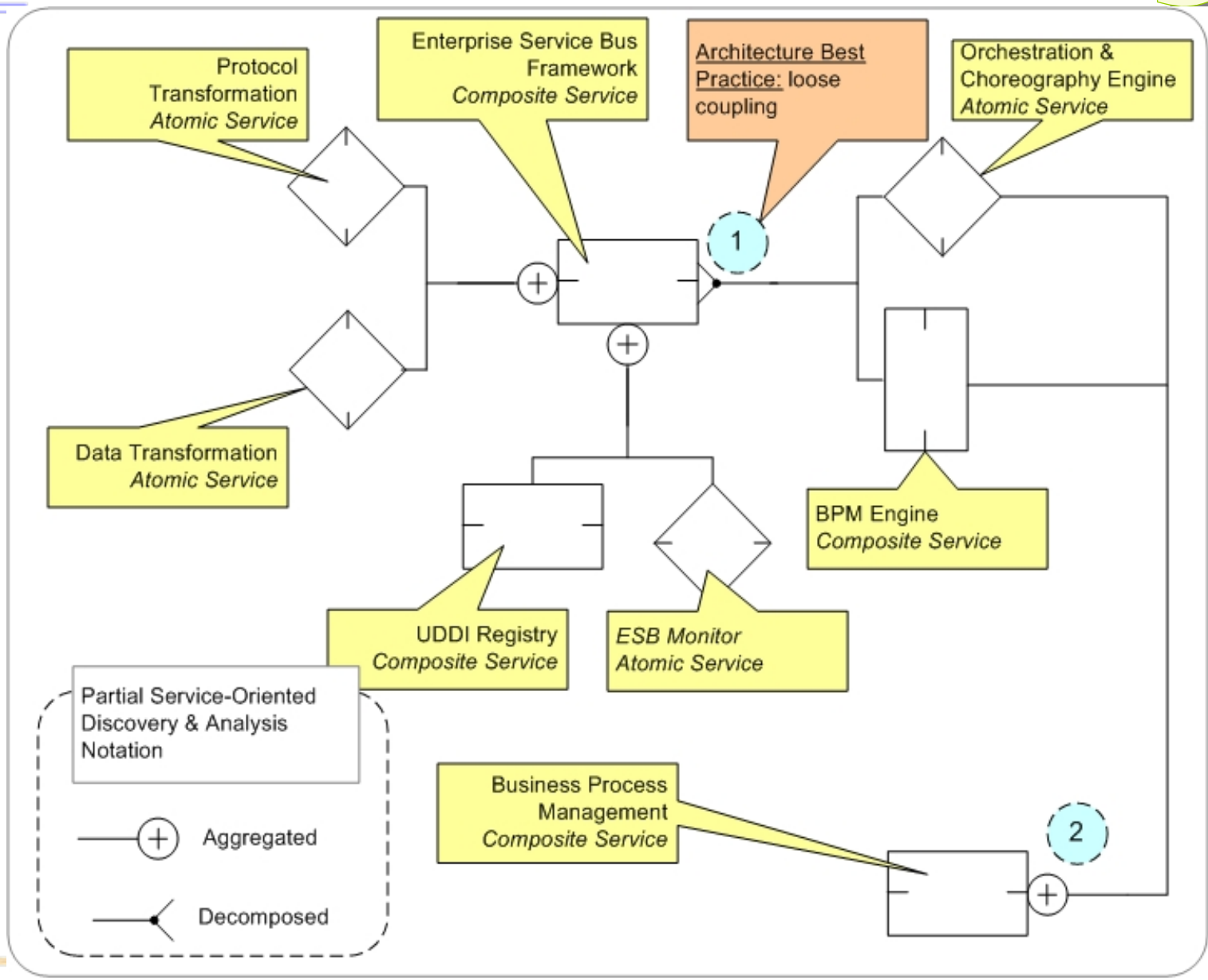
Governance/Best Practices Traceability Perspective

During your service-oriented analysis process identify SOA best practices that are advocated by your SOA government organization.

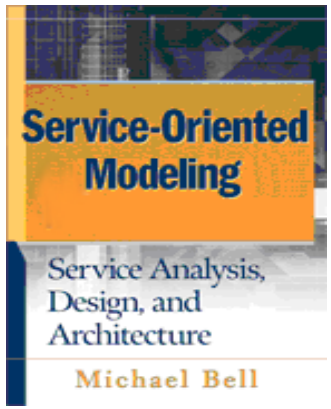


Another Example: Enterprise Level Service-Oriented Analysis

Enterprise Architecture Best Practice Traceability



Read More About Service-Oriented Discovery & Analysis Modeling



Service-Oriented Modeling: Service Analysis, Design, and Architecture

Service-Oriented Architecture: A Planning and Implementation Guide for Business and Technology

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