Lightning Talk

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Towards a Technique for Extracting Microservices from Monolithic Enterprise Systems

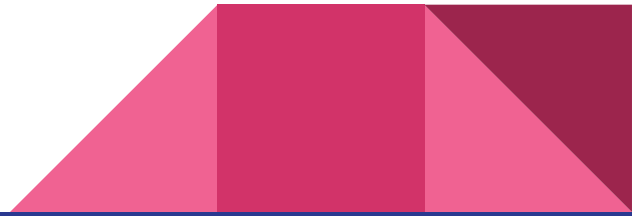
By Alessandra Levcovitz, Ricardo Terra, Marco Tulio Valente, 2016

Context

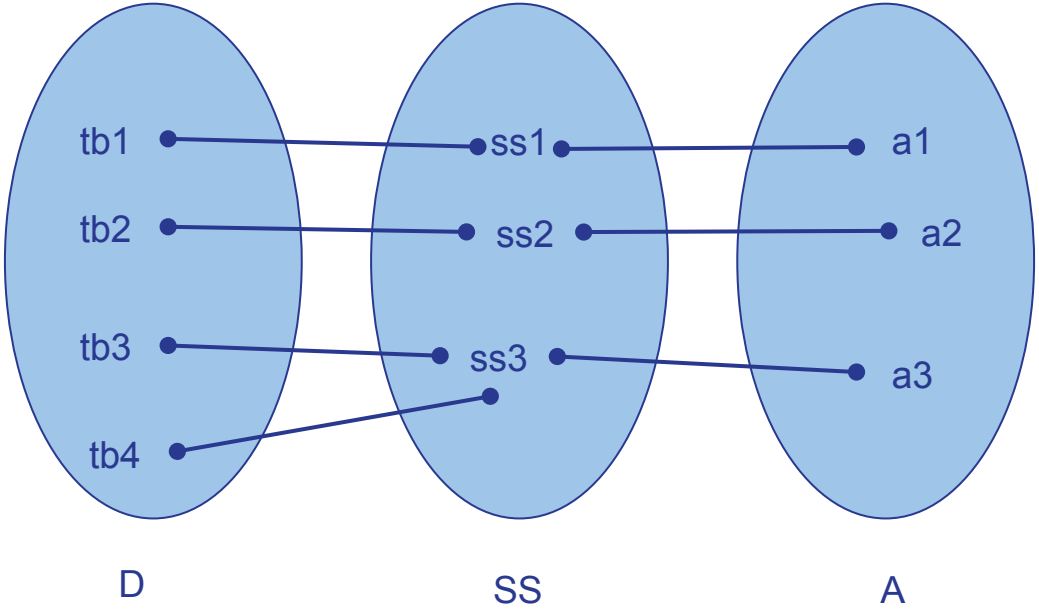
Methodology

For a System S …

- O = {a1, a2, . . . , aw} : Enterprise, divided in business areas.
- F = {fc1, fc2, . . . , fcn} : Facade, entry point of the system.
- B = {bf1, bf2, . . . , bfn} : Business functions, the logic implementation.
- D = {tb1, tb2, . . . , tbn} : Database tables of the system.



#1 Database decomposition

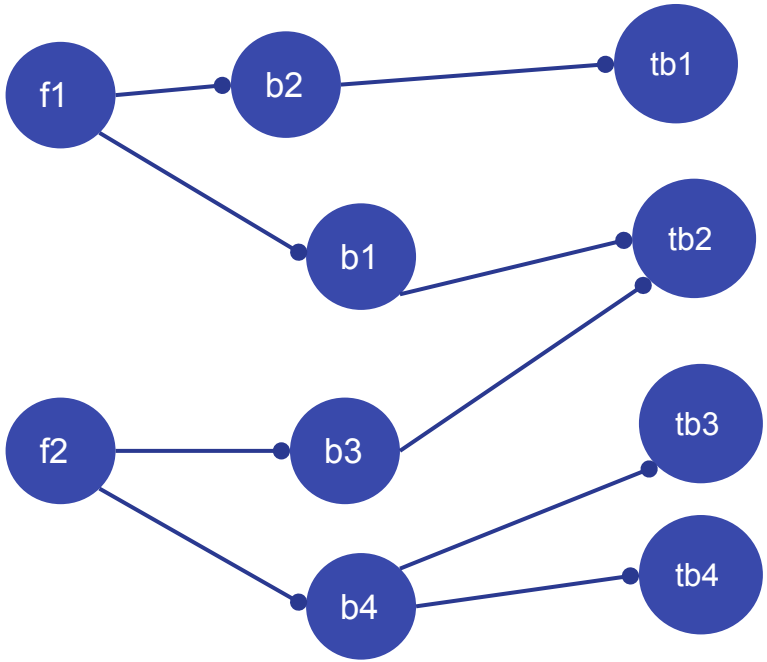


Subdomains **ssx**

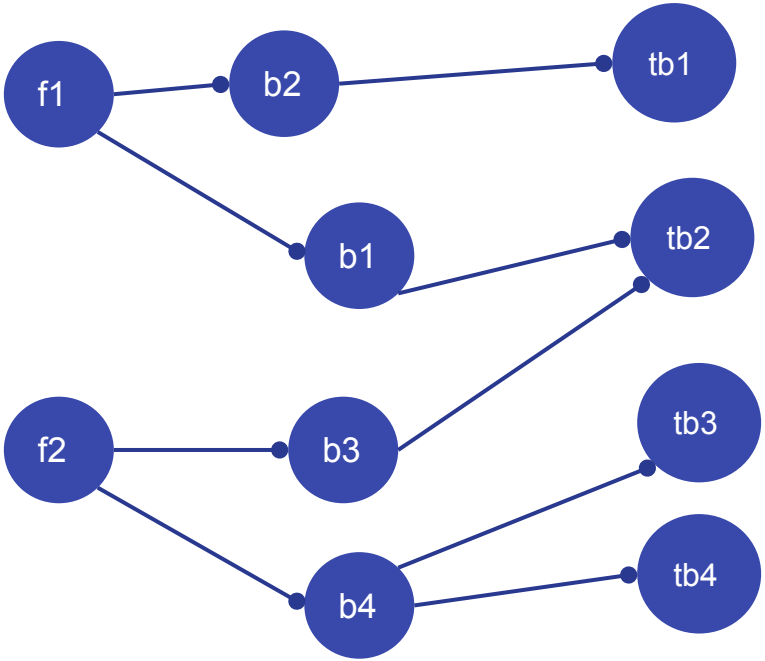
Business areas **ax** of the Organisation

Database tables **tbi**

#2 Dependency graph



#3 Pairs identification



#4 Pairs classification

- **SS1 : (f1, tb1),**
- **SS2: (f1,tb2), (f2,tb2), (f2,tb3)**
- **SS3: (f2,tb4)**

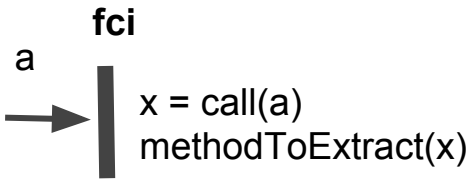
#5 Candidates description

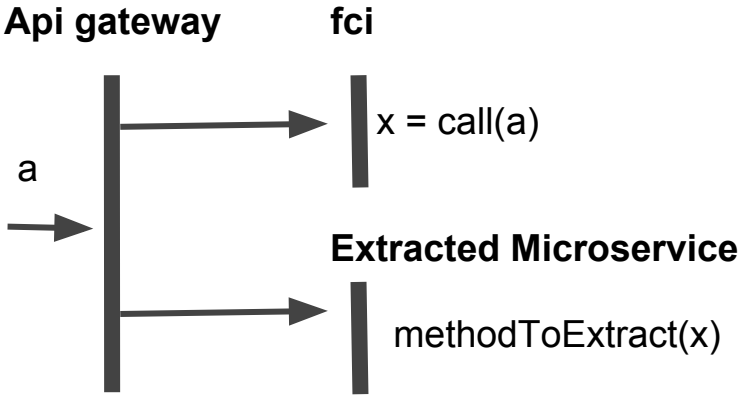
- **Name**
- **Purpose**
- **Input/Output**
- **Features**
- **Data**

#6 Candidates selection and api gateways

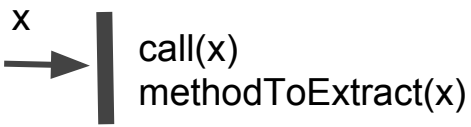
- **“strong candidates”**
- **“candidates with additional efforts”**
- **“non candidates”**

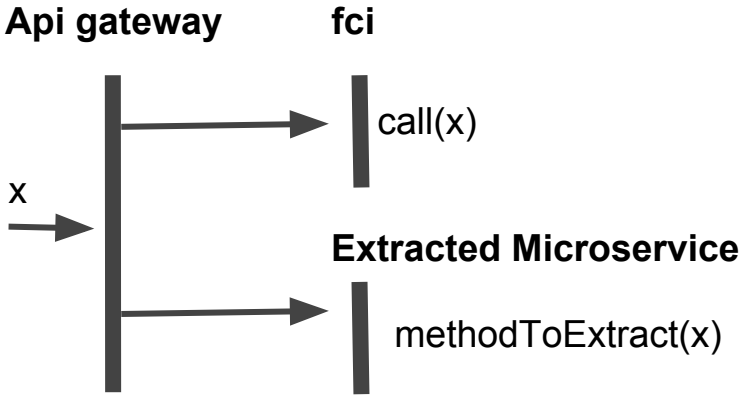
#6 - 1 : Strong candidates



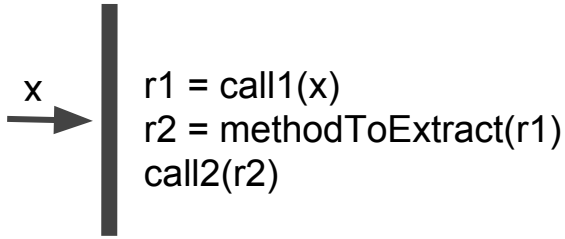


#6 - 1 : Strong candidates

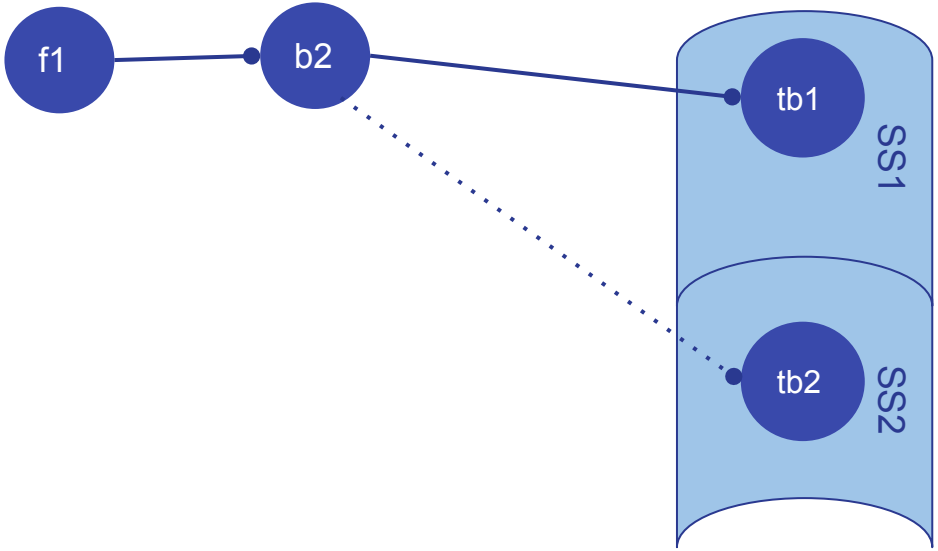




#6 - 3 : Candidates with additional efforts

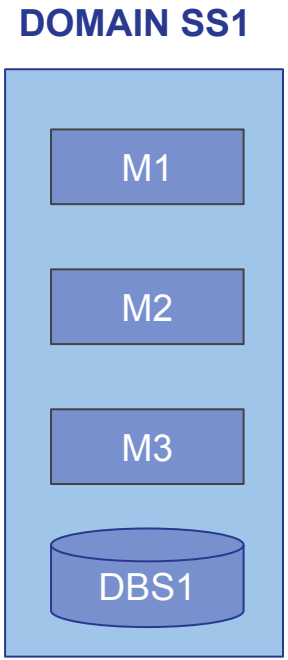


#6 - 3 : non-candidates



Analyse

Database Bottleneck



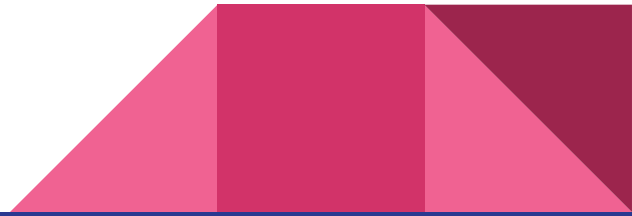
- One DB per domain SSx
- Scaling is restricted by the DB constraint

API gateways contain logic

API Gateway synchronizes calls between microservices.

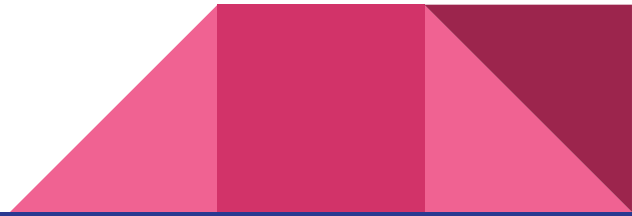
Assumption on database tables is not often true in real applications

Differents business areas often use same database entities



There is no recipe for microservices ...

- In real life, building microservices is a craft work.
- Document gives a formalisation that helps with the process.
- Use it as a guide, and adapt to different cases.



Conclusion