Döntés támogatás
IBM Operational Decision Manager-rel

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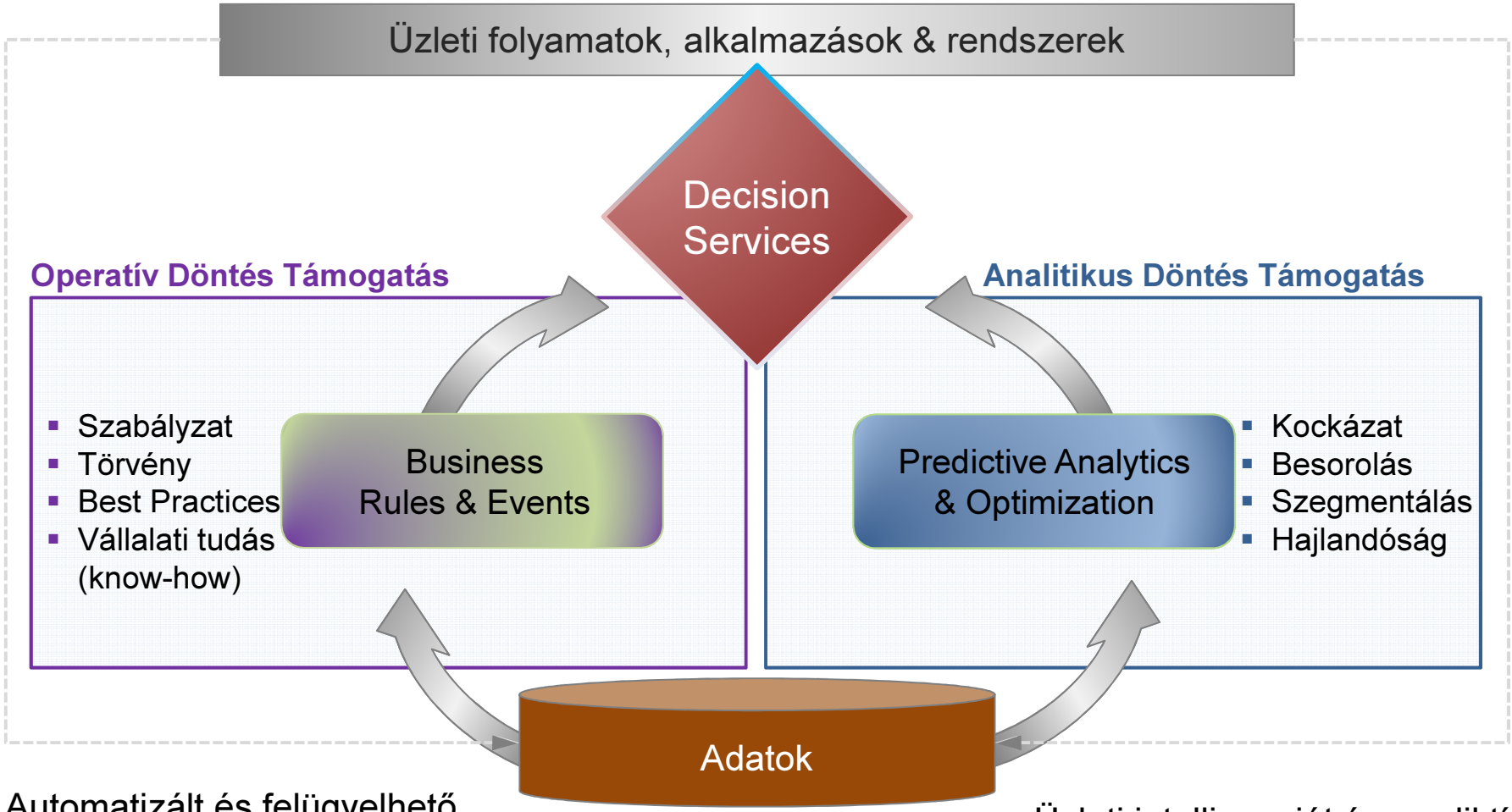
Döntés támogató rendszerek



Automatizált és felügyelhető döntéstámogató szolgáltatásokat foglal magában.

Szabályzatokból, vállalati tudásokból építkezik.

Üzleti intelligenciát és prediktív betekintést nyújtó döntéstámogató szolgáltatásokat foglal magában.

Historikus adatokra épít, tanul.

Operatív Döntés Támogatás típusai

Validációs szabály
- *Jogosultság ellenőrzése*

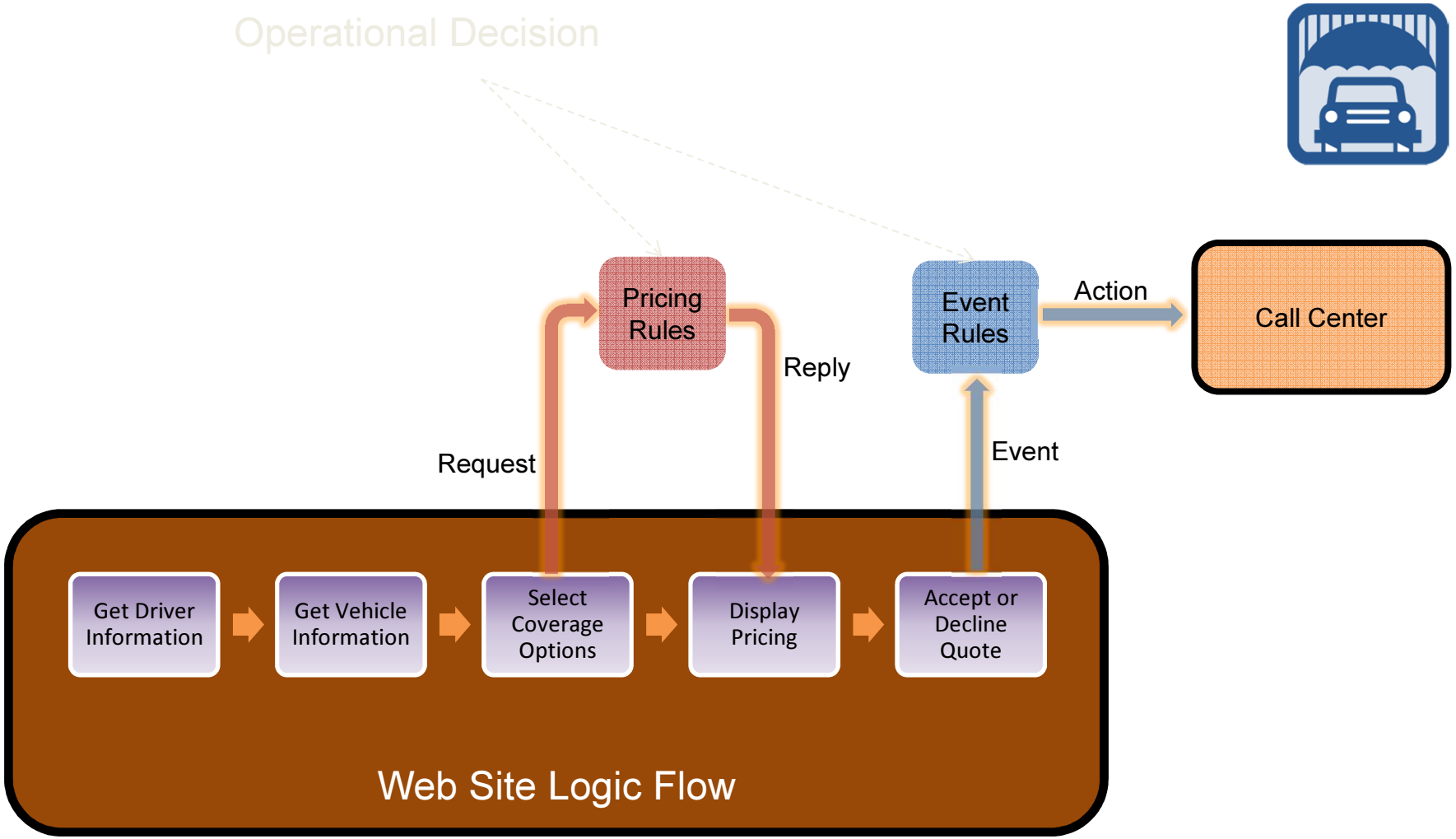
Kalkulációs szabály
- *Dinamikus árazás*
- *Jutalék*

Osztályozó szabály
- *Gold, Silver, Bronze*
- *Kockázat*

- *If customer asks for 3 quotes in 24 hours then provide 2% discount for immediate acceptance*

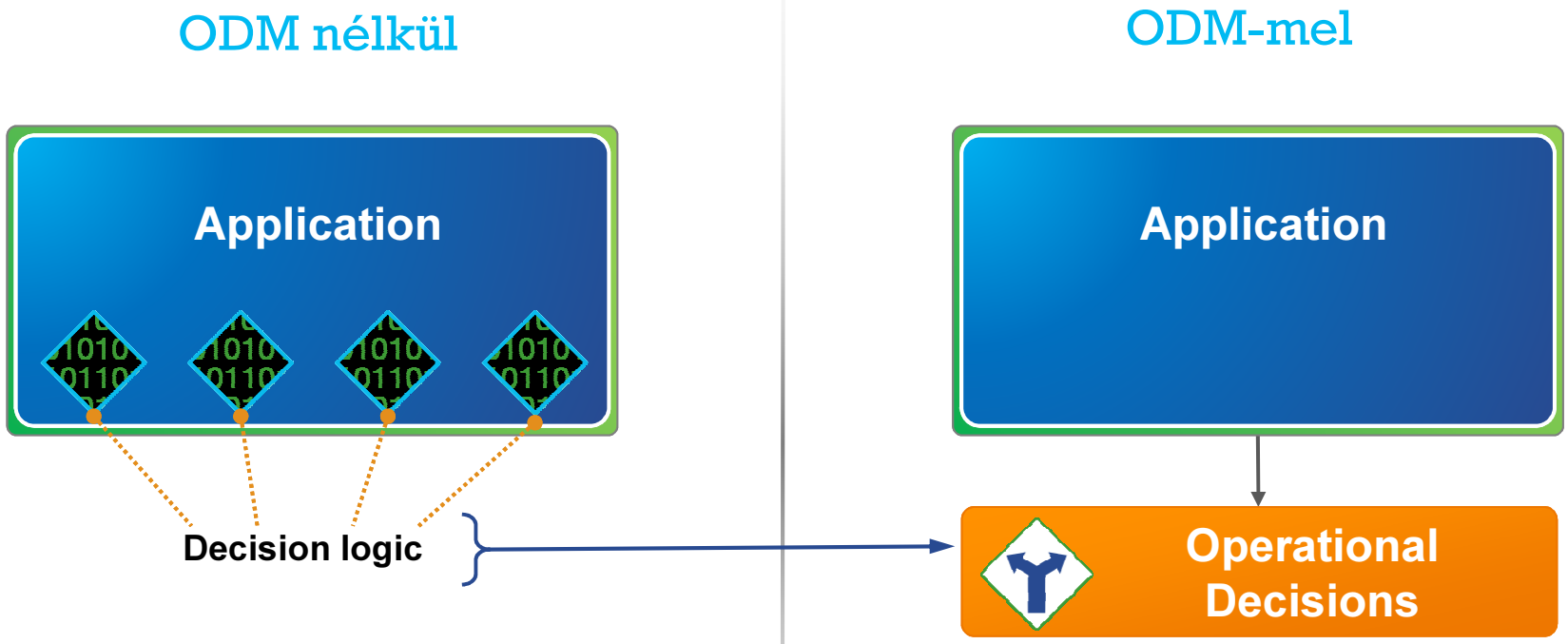
- *If medical equipment event is not receive every 1 hour then send alert to medical staff*

Példa a szabályok alkalmazására



Üzleti szabályzatok externalizálása

Döntési logika alkalmazástól független menedzselése



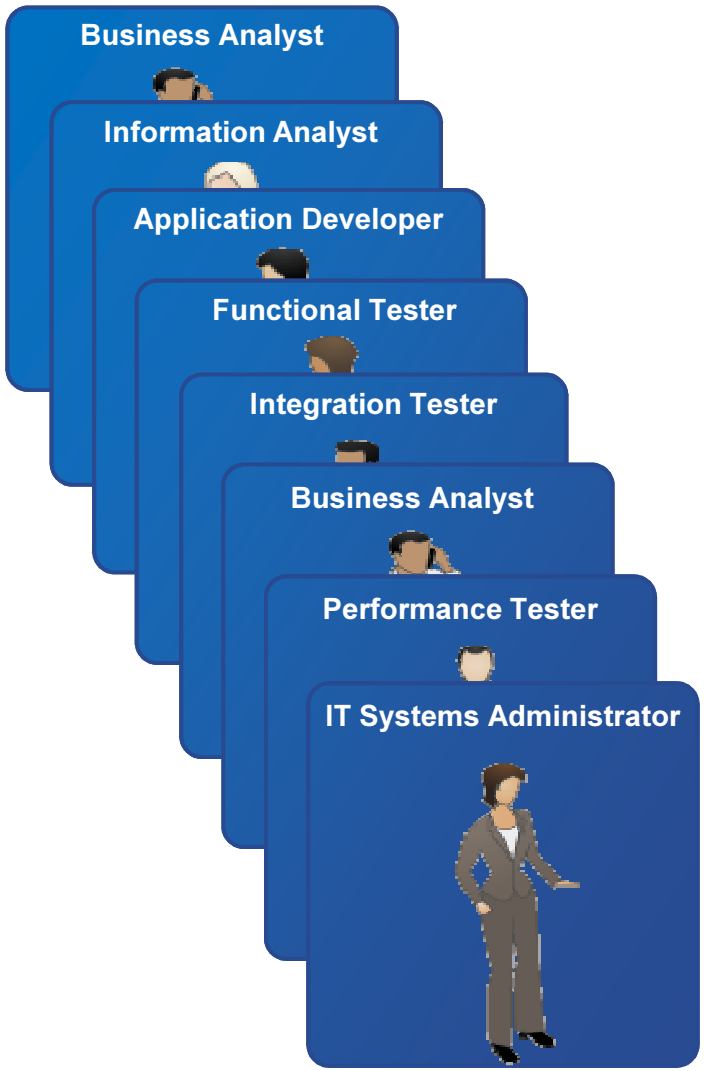
- A „beégetett kódokat” nehéz karbantartani, módosítani
- Rendszerekben rögzített szabályokat nehéz újrahasználni

- A externalizált szabályok könnyen módosíthatók
- A centralizált döntési szolgáltatások könnyen újrahasználhatók

Üzleti felhasználók által módosítható szabályok

Változtatások végrehajtása napok alatt, hónapok helyett

ODM nélkül



ODM-mel

- Az üzleti felhasználók természetes nyelven vagy döntési táblákban fogalmazzák meg a szabályokat
- Az IT szakértők biztosítják a rendelkezésre állást, megbízhatóságot és az új alkalmazásokat.

Mobil központú – felhő alapú világ

Adat az új természetes erőforrás

2.5
Milliárd
gigabyte új adat naponta

1
Trillion
Kapcsolódott **„kütyü”** 2015-re

3x
Növekedés az egy főre jutó **tranzisztorokban** 2017-ig

The goal is not to

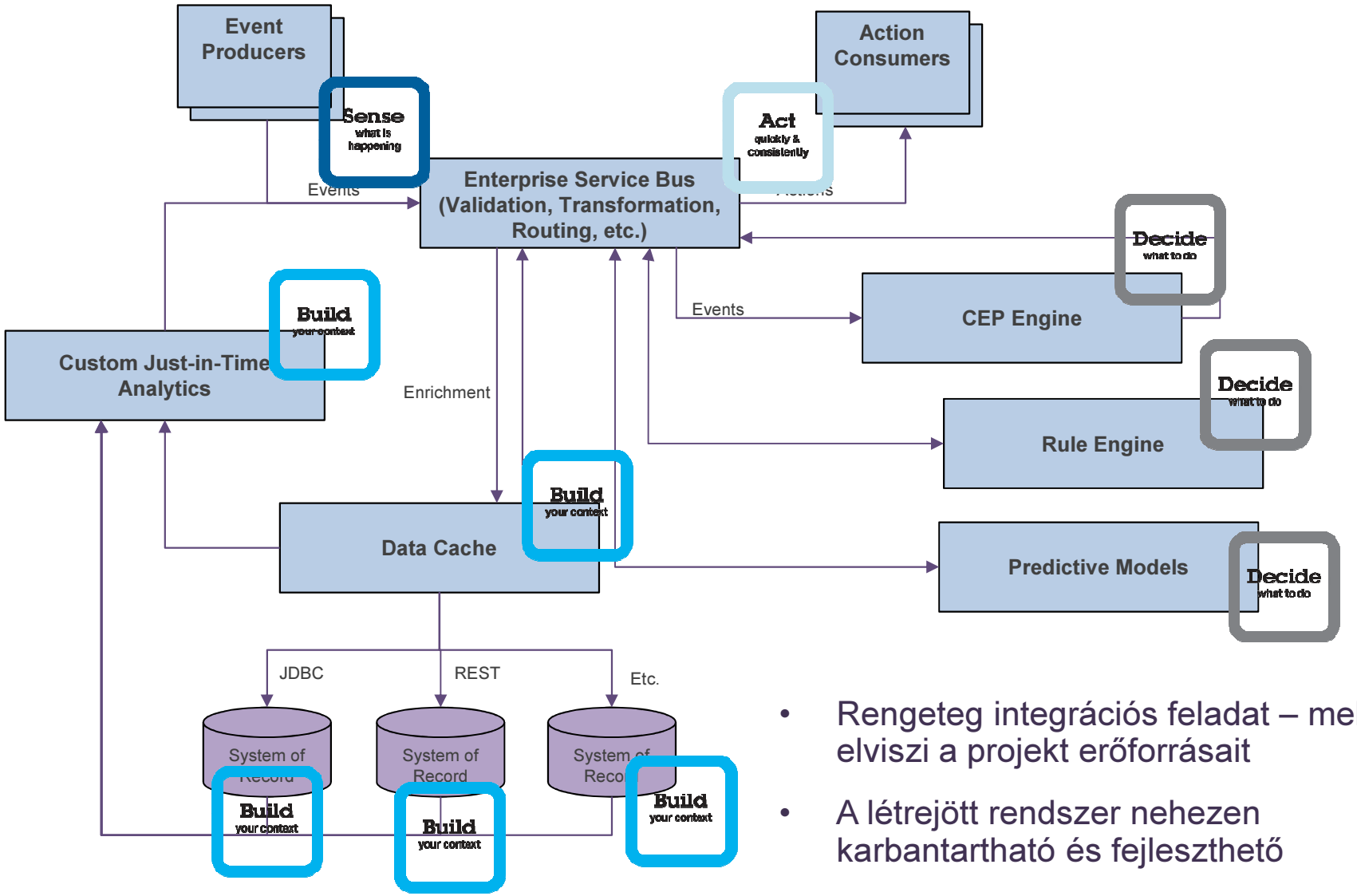
collect big data

The goal is to

act on big data

Insights: Valós idejű észlelés és beavatkozás

„Build your own” megoldás

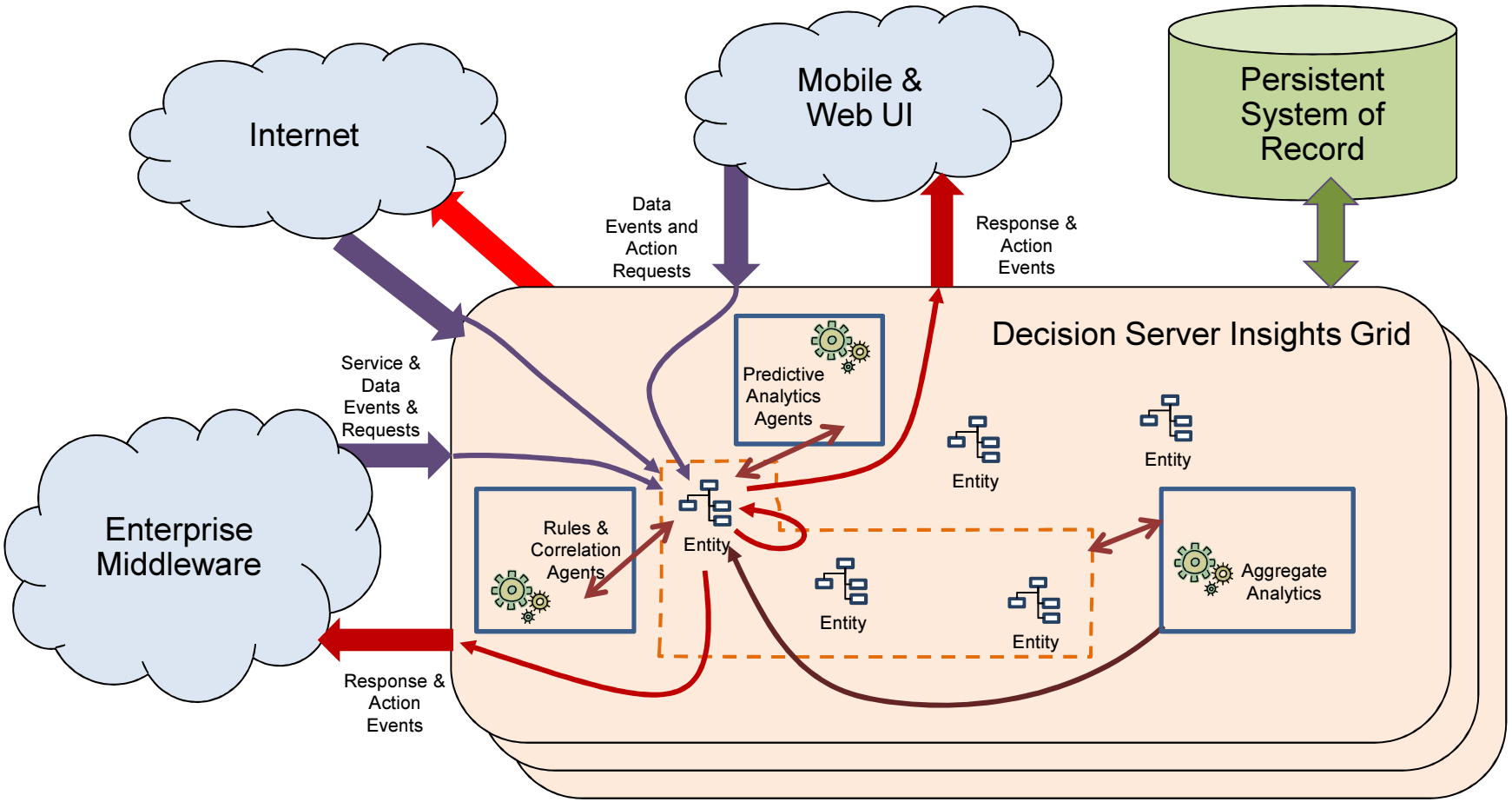


- Rengeteg integrációs feladat – mely elviszi a projekt erőforrásait
- A létrejött rendszer nehezen karbantartható és fejleszthető

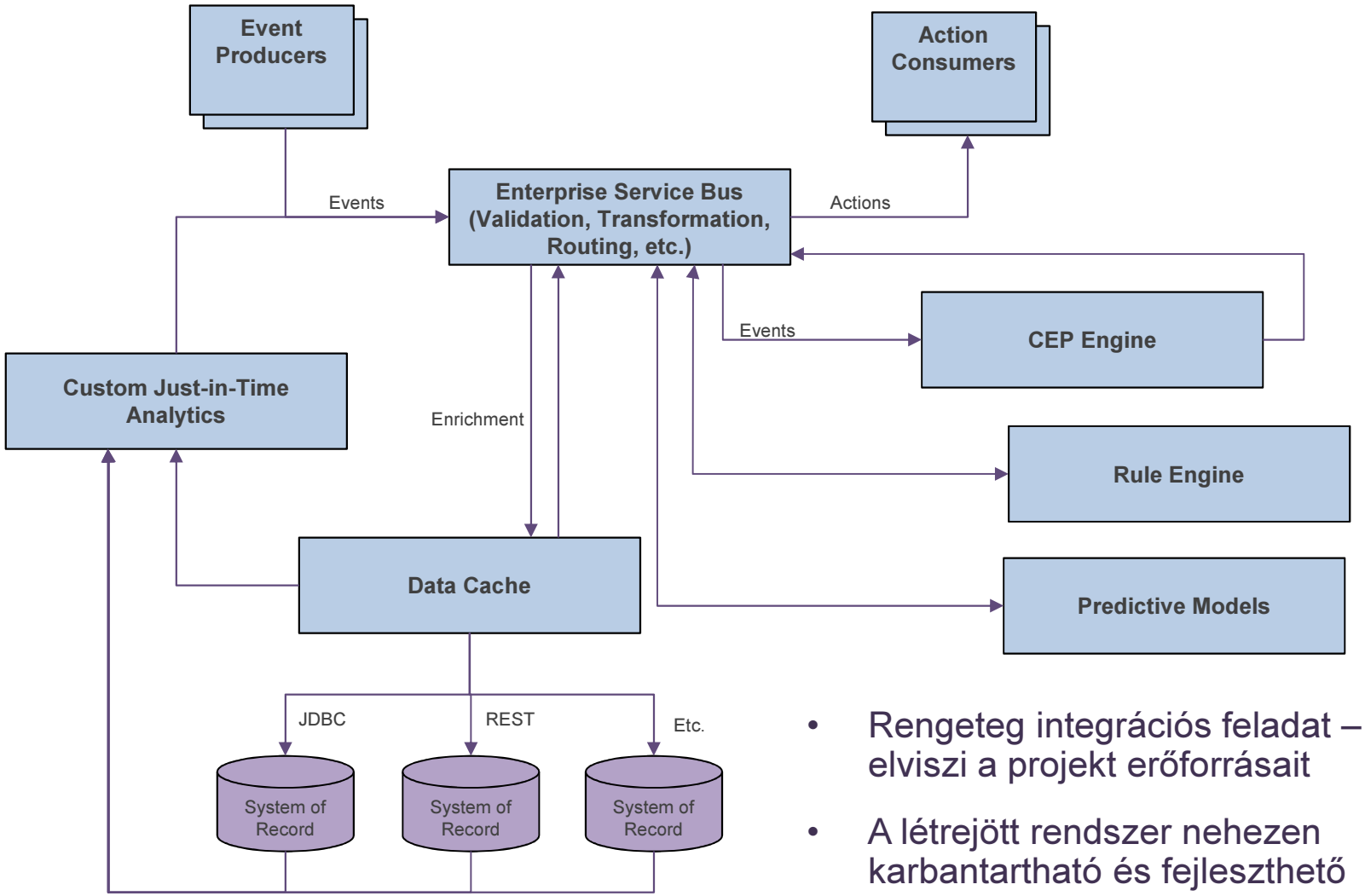
ODM Insights építőkövek

ODM Insights összefoglaló

- Nagy terhelésre skálázva
- Folyamatos rendelkezésre állással:
  - Hardware & software meghibásodás
  - Megoldás változása



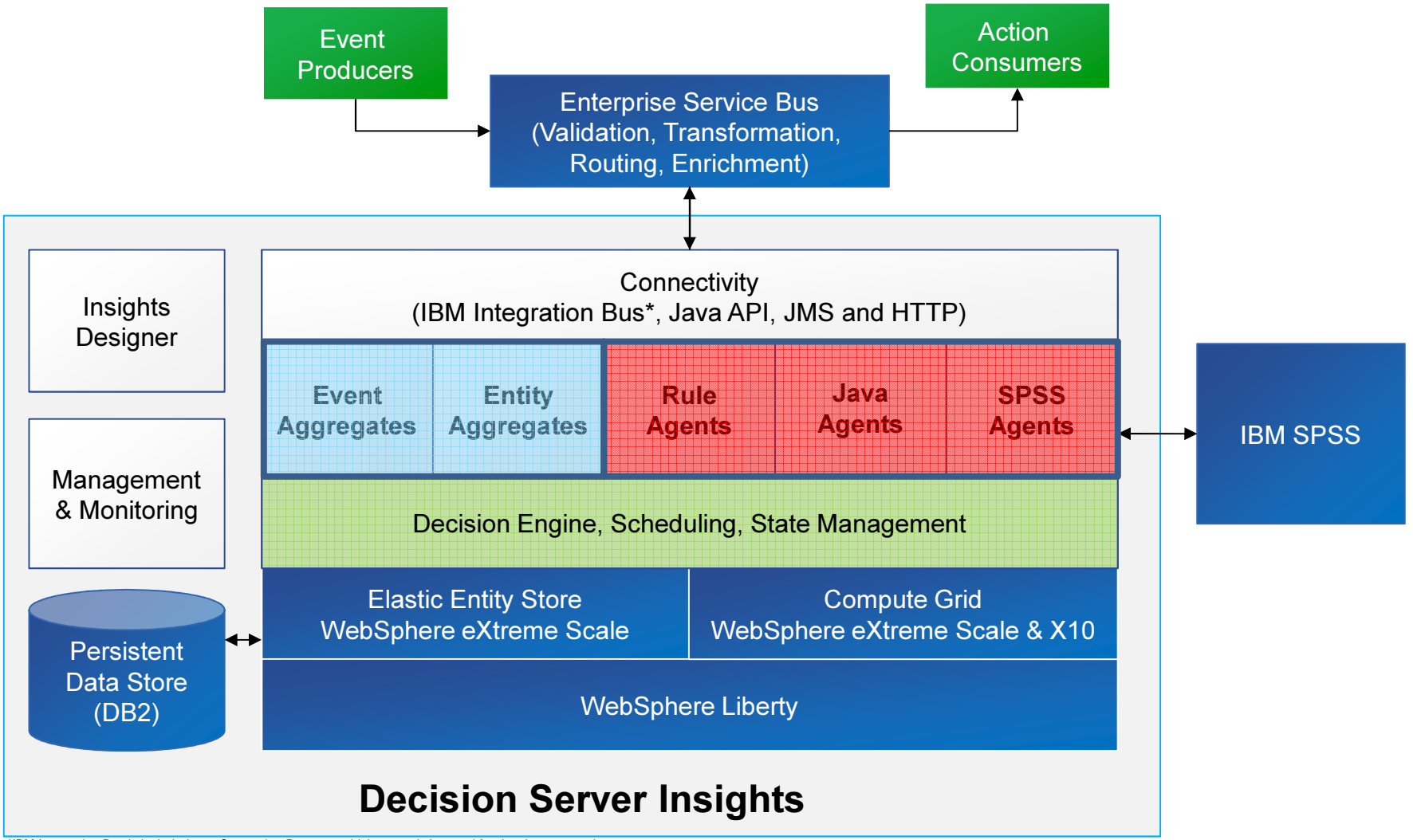
„Build your own” helyett



- Rengeteg integrációs feladat – mely elviszi a projekt erőforrásait
- A létrejött rendszer nehezen karbantartható és fejleszthető

Architektúra

Üzleti és szituációs szabályok, prediktív analitikai képességek egyetlen platfromban



*IBM Integration Bus is included as a Supporting Program, which can only be used for development and test purposes.

Lokális és globális programozási modell

Lokális (agent)

Egy üzleti entitáshoz kapcsolódó szituáció észlelése, döntés kiértékelése és akció végrehajtása

Például:

- if the current event is the third cash transfer for this customer within 1 week then …
- if the systolic BP for this patient has been above 140 for more than 3 minutes then …
- if this locomotive has more than 3 non-urgent fault events and is not scheduled for routine maintenance within 2 weeks then …
- if this customer is a gold customer and the predicted wait time for the current call event is more than 60 seconds then …

Globális (job)

Számítások, műveletek végrehajtása üzleti entitások egy halmazán, majd az eredmények elérhetővé tétele a lokális modellben

Például:

- if the total purchases over 30 days for this customer is greater than **the median of total purchases for gold customers in 30 days** then …
  - (median must be computed for a population)
- if **the next likely event for** this customer is account abandonment with probability greater than 0.3 then …
  - (next most likely event is computed based on population behavior using a markov model)
- if this customer **is in a spatial cluster of size 100 meters with 4 or more members of this customer's first degree friends** then …
  - (cluster membership must be computed dynamically on spatial events for entire social network)

Lokális programozási modell

Egy esemény 1 vagy több entitáshoz kapcsolódik. Az esemény beérkezésekor az entitás(ok)hoz irányítódik.

Az entitás adatokat és esemény előzményeket tartalmaz

Event

Entity

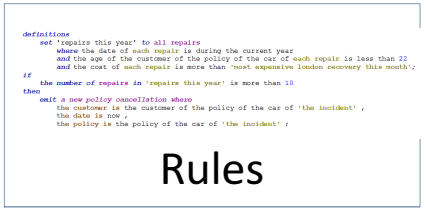
Event History

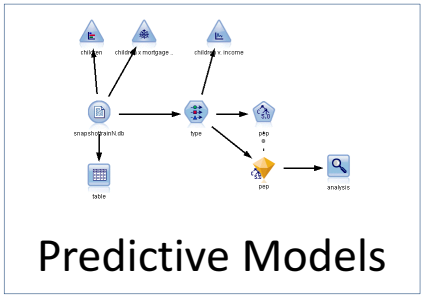
Az ügynökök entitásokhoz kapcsolódnak, és adott eseményeket dolgoznak fel.

Az ügynökök újabb – külső vagy belső - eseményeket válthatnak ki.

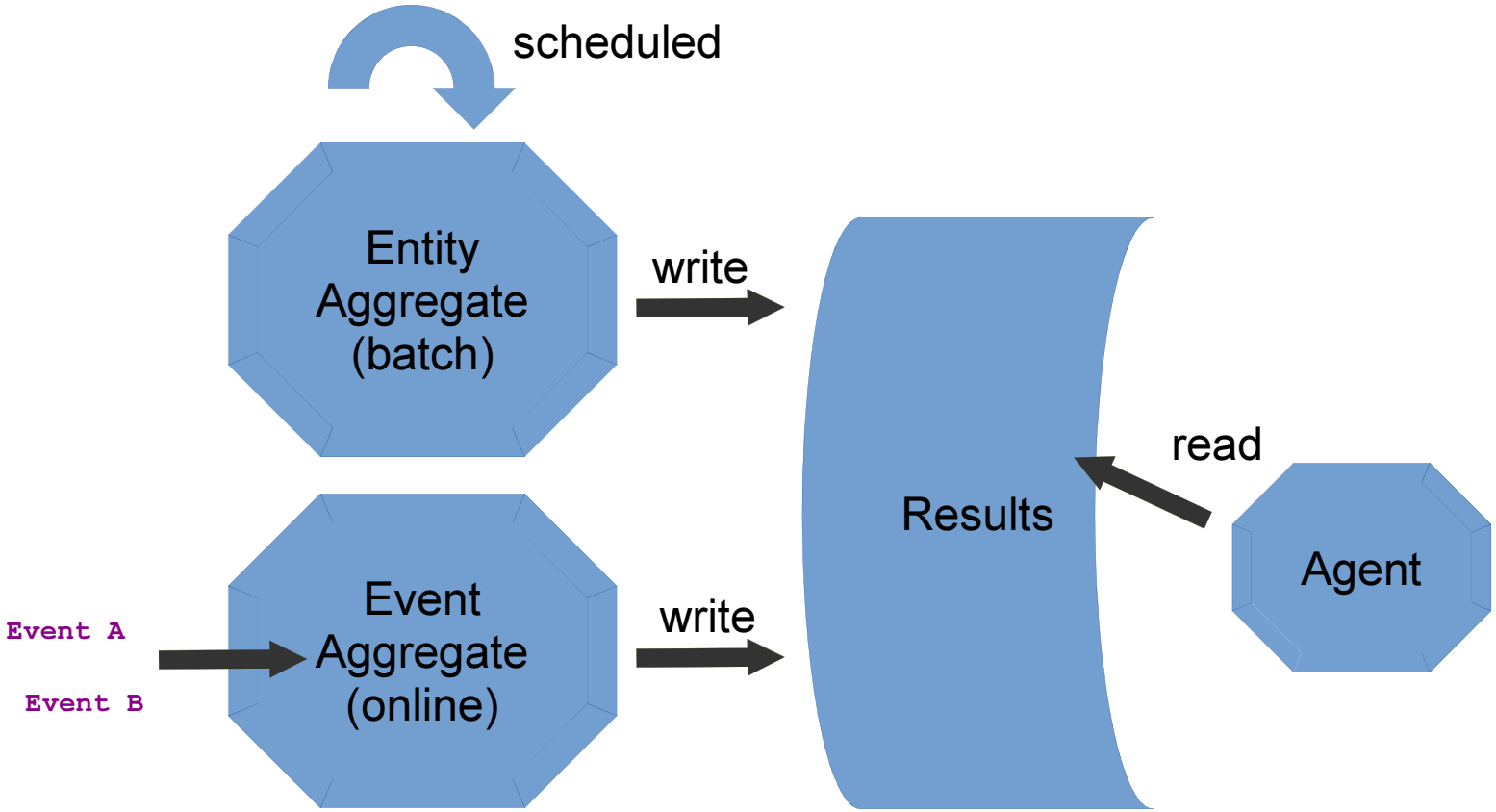
Agent

Az ügynökök üzleti logikája az alábbi három módon implementálhatók





Globális programozási modell



Entity modellezése

```
a car is a business entity identified by a vin with
  a make,
  a model,
  a year (integer).

a car is related to a policy.

a customer is a business entity identified by an email with
   a first name,
   a last name,
   an address,
   a mobile number,
   a sex.

clear and suspect are fraud statuses.

a policy is a business entity identified by an id.
a policy has a start (date & time).
a policy has an end (date & time).
a policy is related to a car.
a policy is related to a customer.
a policy has a fraud status.
```

Entities have an identifier and their own lifecycle.

Esemény modellezése

```
a policy purchase is a business event time-stamped by a date (date & time) with
   a start (date & time),
   a end (date & time).
a policy purchase is related to a car.
a policy purchase is related to a customer.
a policy purchase is related to a policy.

a policy cancellation is a business event time-stamped by a date (date & time).
a policy cancellation is related to a policy.
a policy cancellation is related to a customer.

a vehicle event is a business event time-stamped by a date (date & time).
a vehicle event is related to a car.
a vehicle event is related to an incident.
a vehicle event has an address.

an accident is a vehicle event with
   a severity.

a recovery is a vehicle event with
   a cost (numeric).

a repair is a vehicle event with
   a cost (numeric),
   a dealer.
```

Events have a time of occurrence

Rule Agent példa

Subscribe to events of interest that can be correlated with a car:

```
'car agent' is an agent related to a car,
processing events :
- accident, where this car comes from the car of this accident
```

Implement business logic:

```
when an accident occurs
if
    the severity of this accident is fatal
    or the severity of this accident is injury
then
    emit a new ambulance call where
        the address is the address of this accident ,
        the car is 'the car' ,
        the customer is the customer of the policy of 'the car' ,
        the date is the date of this accident ,
        the description is "Ambulance required: accident/injury accident." ;
    emit a new police call where
        the address is the address of this accident ,
        the car is 'the car' ,
        the customer is the customer of the policy of 'the car' ,
        the date is the date of this accident ,
        the description is "Police required: accident/injury accident." ;
```

Köszönöm a figyelmet!

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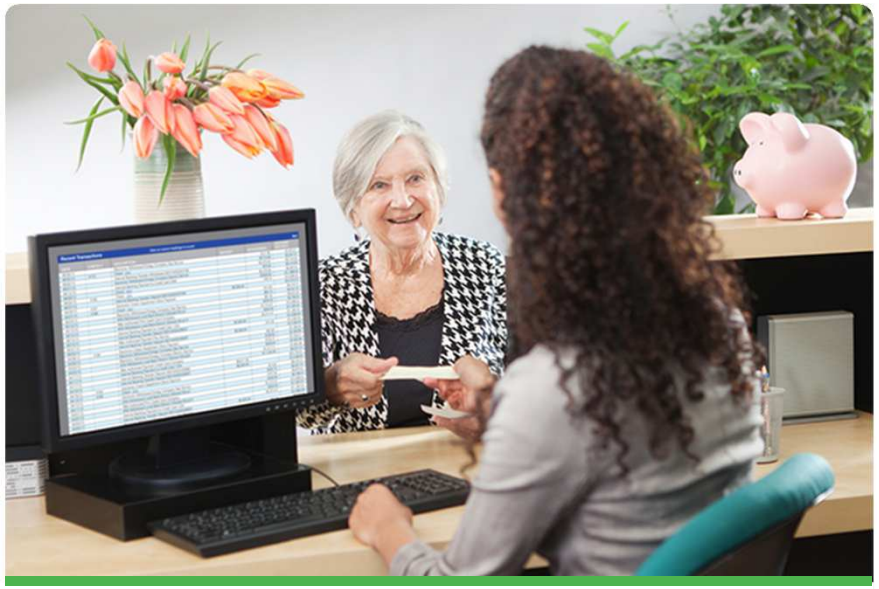
WebSphere Client Technical Professional

New use cases enabled by IBM ODM Advanced



A bank gains the ability to provide prompt, **personalized, proactive service to their clients**

- Flexible, extensible platform for modeling growing set of alert patterns for analysts and sales
- Greater insight into client interactions across channels to enable more personalized service and more intelligent customer relationship management

A railway organization gains **real-time visibility into operations**

- Enhanced real-time visibility into train operations
- Ability to graphically visualize network of equipment
- Greater customer satisfaction from real-time insight and proactive notification

How can IBM help me leverage my **data**, gain **insight** and take **action**?

Some example use cases

- Make my advisors always-aware of client activities and needs?
  - A global financial services firm wants to be aware of all client activities across all channels – on premise, call center, online, social media, etc. – to be able to better serve their clients' needs.
- Create an insurance company where terms and conditions may differ for every customer?
  - Leveraging existing activity combined with predictive analytics to provide the best offer to each customer based on their specific situation.
- Maximize the efficiency of my operations and predict equipment maintenance?
  - A national railway company wants to monitor their freight operations – monitoring the trains as they operate in real-time leveraging sensors on the trains and monitoring various aspects (e.g., fuel, delays, re-planning, etc.) – to provide a graphical presentation of their network and trains, provide alerting and enable decision automation.

How can IBM help me leverage my **data**, gain **insight** and take **action**?

Some more example use cases

- Thrill customers with the smartest and most connected car experience?
  - Having access to information about weather conditions, car service history, current equipment status and current location, being able to warn a driver that within 15 miles they are coming up on rainy weather and that their windshield wipers are in poor condition, but that there are three auto repair facilities with the correct wipers within 5 miles of their current location.
- Allow customers to have their own home security rules?
  - Enabling a customer to create or personalize the rules for configuring their home management system – e.g., 30 minutes before the time I usually arrive home, turn up the thermostat to 70° F, but if I don't unlock my door within 30 minutes after that time, return the thermostat to 62° F.
- Detect more complex patterns of fraud and update them faster?
  - Ability to track transactions, establish key indicators (aggregates), invoke scoring models, apply situation rules to monitor fraud situations and alert the involved parties and take actions as appropriate (e.g., block related transaction).