Fachhochschule Nordwestschweiz
Hochschule für Wirtschaft

qualified for Business Information Systems MSc BIS

Business Rules Applications

Application Examples

- Credit Suisse
- Leading Swiss Bank
- RTC

Challenges for a Bank

- Globalisation of bank business
- fast reaction on changing environment
- high innovation rate for bank products
- product variety and complexity
- reliability
- regulations

Where are rules today

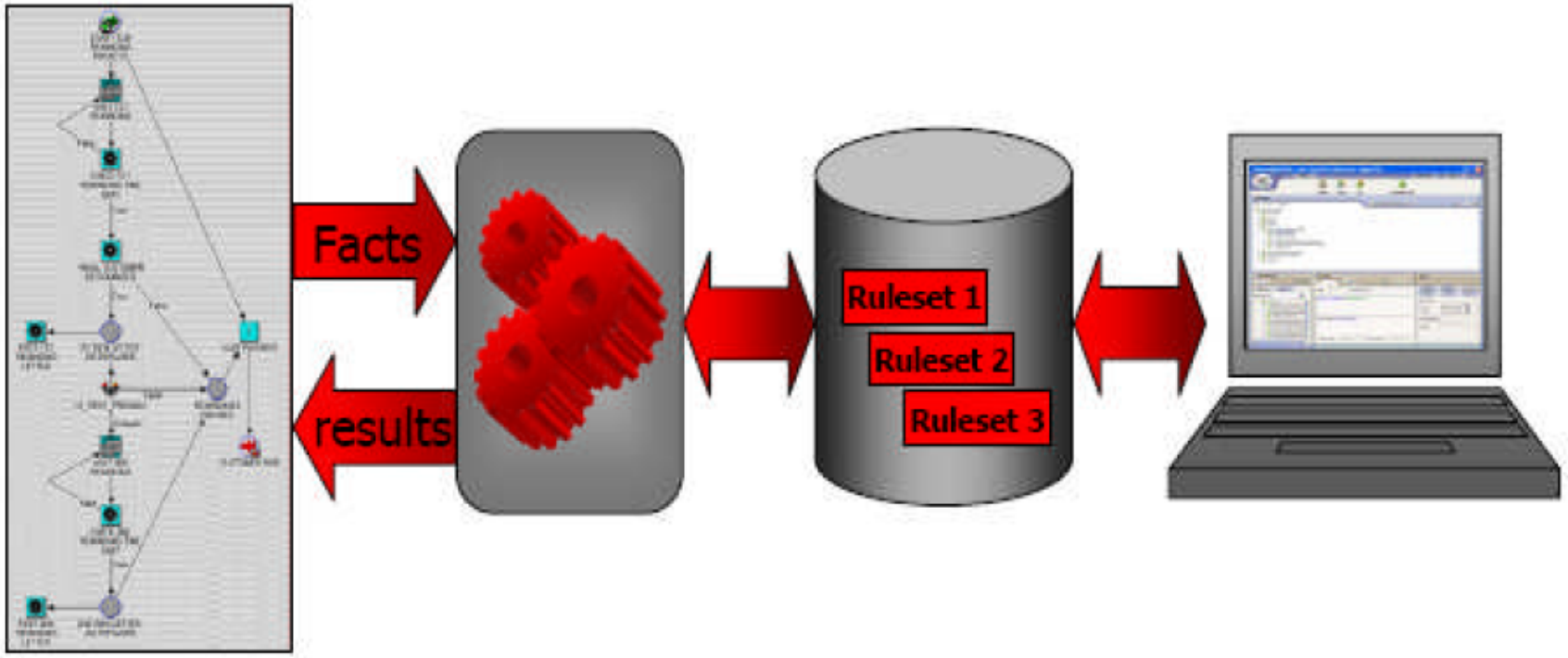
- In head of people
- manuals
- tables (Excel, Word)
- business process description
- IT systems
  - Credit Suisse
    - 700 application
    - 15 Mio LOC PL/1
    - 10 Mio LOC Java
    - purchased software systems

```
if (S_CD_KUNDENART = '130' &  ^SIKAT0077) then
  do ;
    Error_Code = '1134';    /* KEINE AUTORISATION FUER*/
end ;                       /* MUTATION PERSDATEN     */
```

Difficulties

- Number of rules increases
- ten thousands of rules in code of applications
- identification and modification of rules time-consuming
- new rules ➔ new release of application
  - ♦ but: product development is not synchronized with software release cycles

Idea: Extract Rules from Applications and store in Business Rules Engine



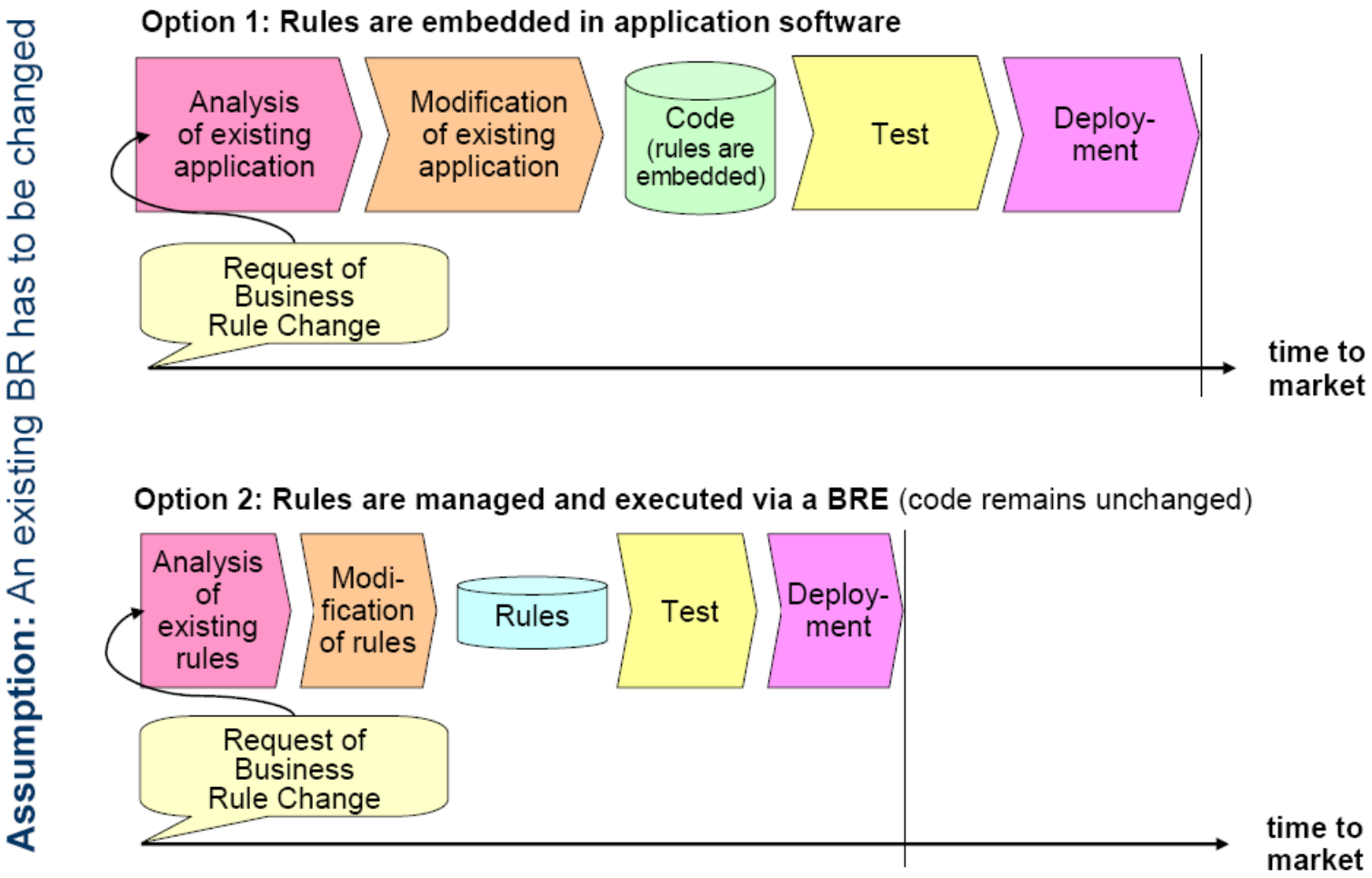
(Quelle: A. Singer, 2005)

Application 1: Opening of new Bank Accounts

- Existing Application with the following functionality:
  - Opening bank accounts, customer identification, sales of more than 100 products, controlling of legal aspects, generate and print contracts
- Problem area
  - > 20'000 rules
  - redundancy of rules
  - insufficient comprehensibility an clarity
  - high maintenance costs
- Solution:
  - Business Rules Engine
  - Reengineering of existing application

Cases	Einzelfirma	AG	GmbH	Kollektiv-Gesellschaften	Kommandit-Gesellschaften	Genossenschaften	Vereine	Trust	Stiftungen	...
Relationship opening (create)										
Relationship enhancement (modify existing data)										
Product 1										
Product 2										
Product n										

Business Rules and Software Validation



Finding

- Business Rules work – even with thousands of rules
- Combination of rule builder and rule engines works
- BRE required re-engineering of existing rules
- building up vocabulary in the beginning was important
- new role distribution between IT und business
  - more tasks for business (e.g. testing and changing rules)
- iterative development more important than in other projects
- testing and deployment require adequate processes (who makes tests, what has to be tested, …)?
- validation of rules by business
- tracing rule changes is important

Pricing of financial products

- New pricing models
  - service bundling
  - cross selling
- customer-specific fees
- influence customer behaviour
- central pricing and billing

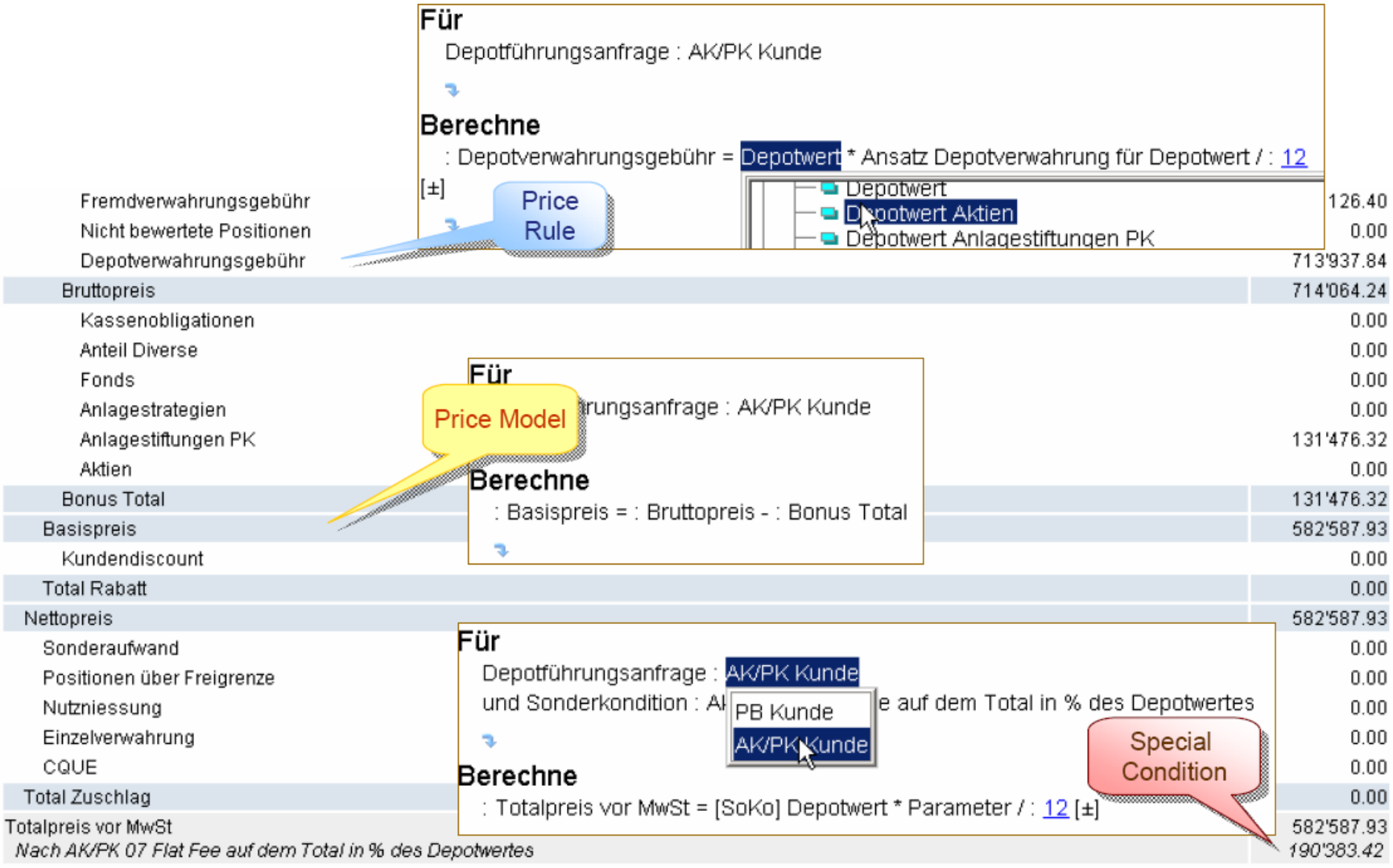
Task

- Maestro and customer cards
  - simple fee models
  - different types of customers (private, company, …)
  - perdiodical and ad-hoc fees
- keeping customer accounts
  - complex fee structure
  - retail and private bank customers
  - individual special conditions

Result

- Maestro and customer cards
  - 12-15 rules
    - 1 decision table
    - 5 extra rules
  - Test with 400 transactions: 100% correct
- keeping customer accounts
  - 70-80 rules
    - 20 for retail customers, 20 for private banking customers
    - 40 for special conditions
  - Test with calculations: 3 deviations >1 Rappen

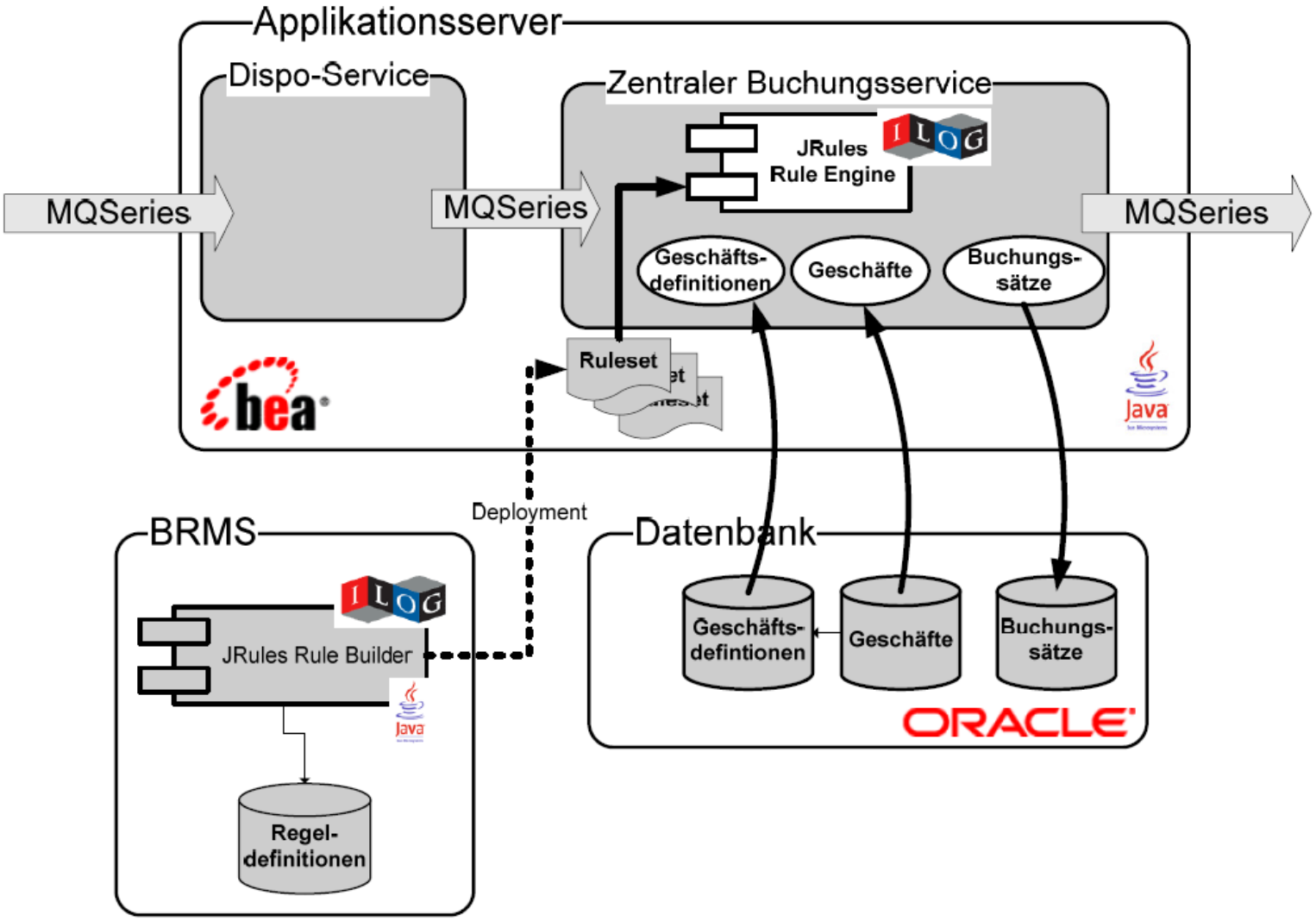
Result


Für
Depotführungsanfrage : AK/PK Kunde
Berechne
: Depotverwahrungsgebühr = Depotwert * Ansatz Depotverwahrung für Depotwert / : 12
[±]
Depotwert
Depotwert Aktien
Depotwert Anlagestiftungen PK
Price Rule
Fremdverwahrungsgebühr 126.40
Nicht bewertete Positionen 0.00
Depotverwahrungsgebühr 713'937.84
Bruttopreis 714'064.24
Kassenobligationen 0.00
Anteil Diverse 0.00
Fonds 0.00
Anlagestrategien 0.00
Anlagestiftungen PK 131'476.32
Aktien 0.00
Bonus Total 131'476.32
Basispreis 582'587.93
Kundendiscount 0.00
Total Rabatt 0.00
Nettopreis 582'587.93
Sonderaufwand 0.00
Positionen über Freigrenze 0.00
Nutzniessung 0.00
Einzelverwahrung 0.00
CQUE 0.00
Total Zuschlag 0.00
Totalpreis vor MwSt 582'587.93
Nach AK/PK 07 Flat Fee auf dem Total in % des Depotwertes 190'383.42
Für
rungsanfrage : AK/PK Kunde
Price Model
Berechne
: Basispreis = : Bruttopreis - : Bonus Total
Für
Depotführungsanfrage : AK/PK Kunde
und Sonderkondition : Al
PB Kunde
AK/PK Kunde
e auf dem Total in % des Depotwertes
Special Condition
Berechne
: Totalpreis vor MwSt = [SoKo] Depotwert * Parameter / : 12 [±]

Universal Banking Software IBIS

- 3.4 mio accounts and depots
- 254 mio bookings per year (about 1 mio per day)

Central Accounting System



Rules and Processes

Account identification
Rules identify accounts for debits and credits

SIC-Zahlung

[Definitionen]

Wenn
Name des Geschäft ist : ZV.SICZahlung
und Name des Element ist : ZV.ZahlungsDaten

Dann
setze SOLL-Konto auf : Ordinario-Konto des Geschäft
und setze HABEN-Konto auf : SIC-Konto
und setze HABEN-Bankstelle auf : Bankstelle des Ordinario-Kontos des Geschäft

[Sonst]

Some Experiences

- During development
  - high requirements for people
  - multiple iterations necessary
  - default rules (rules for every case)
- Performance
  - Key is efficient data access
- Test
  - optimal comparability of specification and implementation
- Rule identification was time-consuming and error-prone