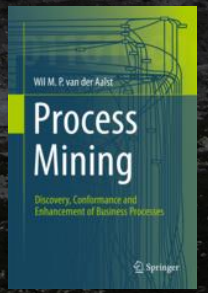
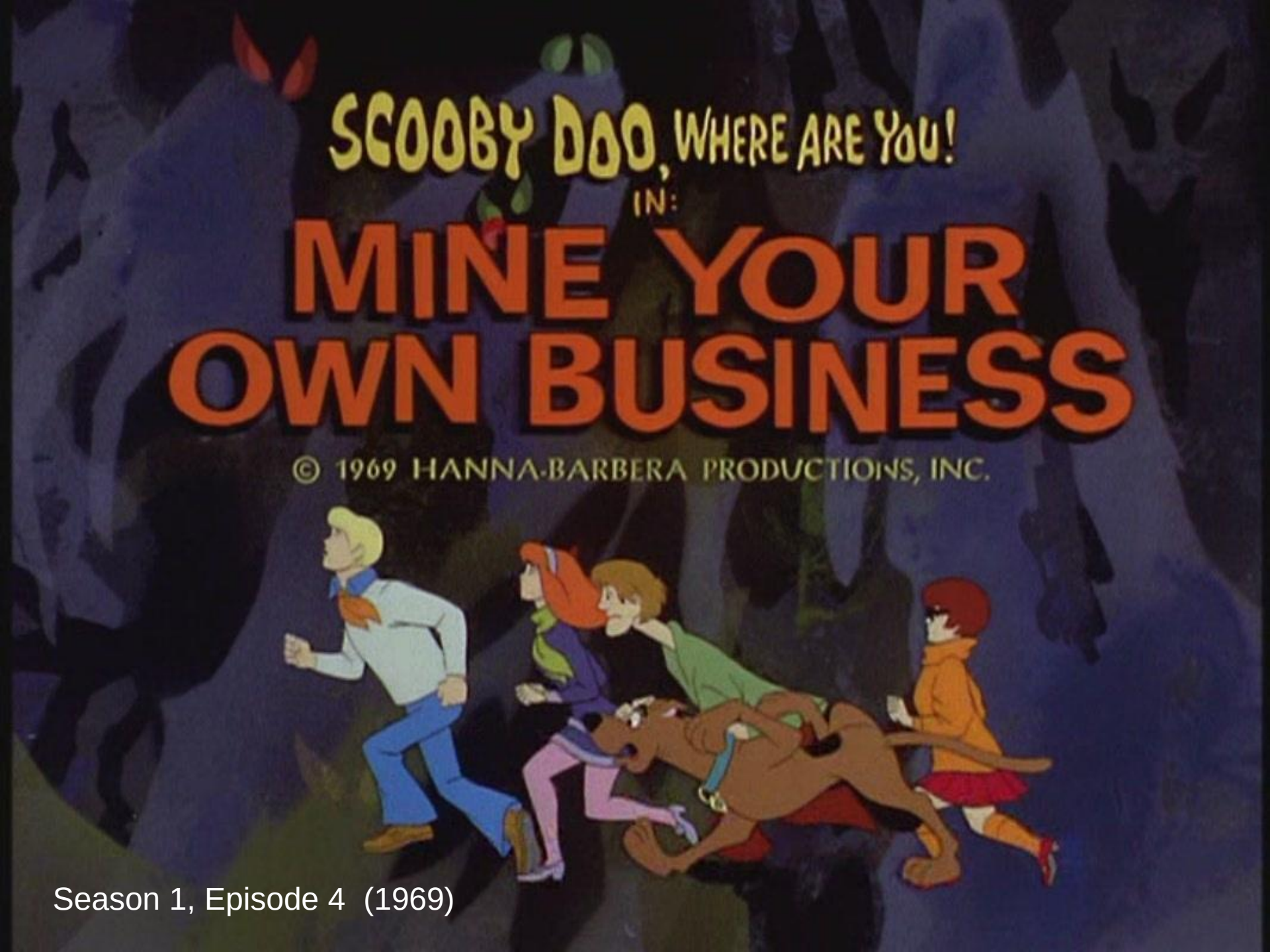
Mine Your Own Business

Using process mining to turn big data into better processes and systems

prof.dr.ir. Wil van der Aalst

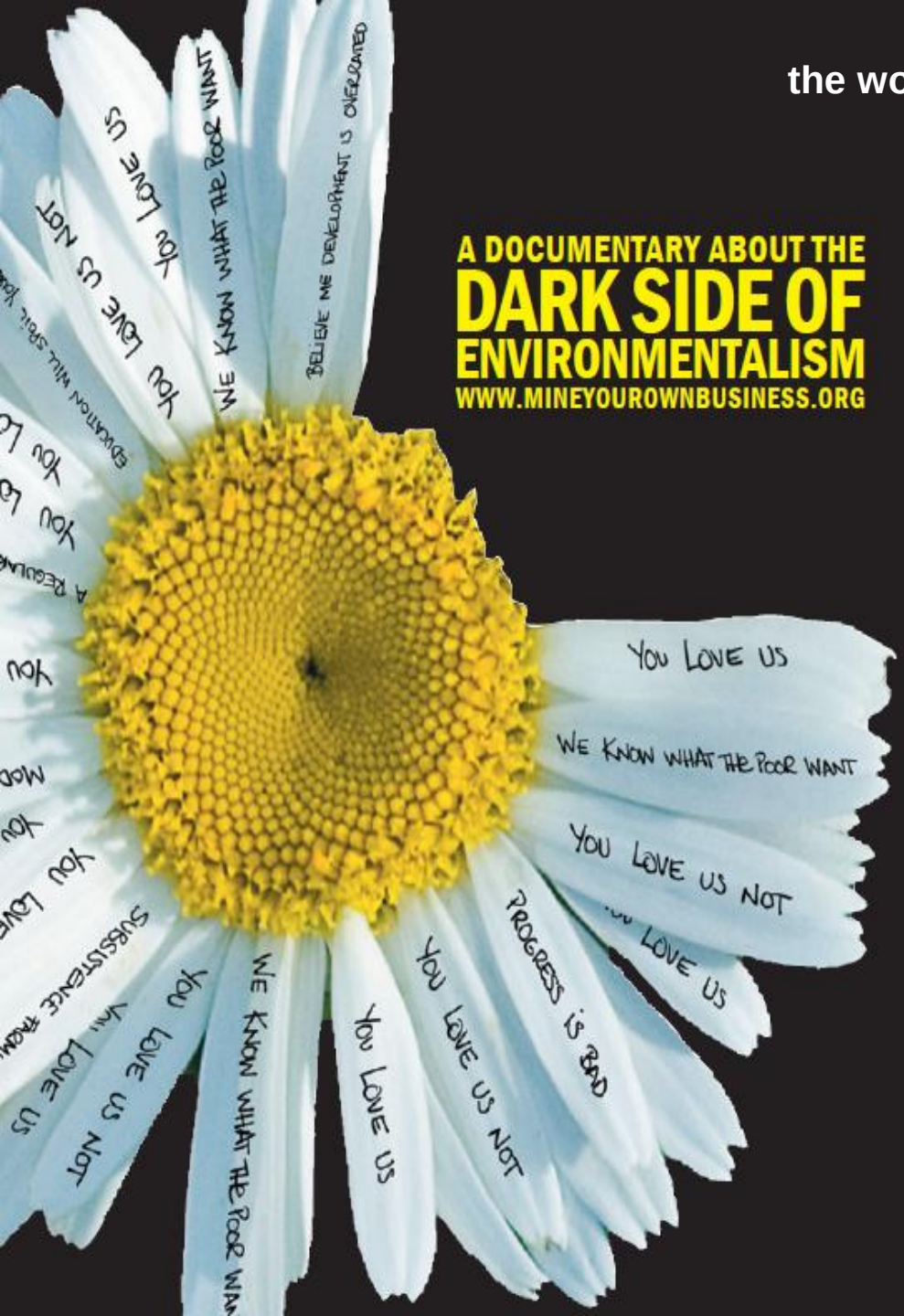


TU/e Technische Universiteit Eindhoven University of Technology



Season 1, Episode 4 (1969)

"Mine Your Own Business" (2006)
the world's first anti-environmentalist documentary

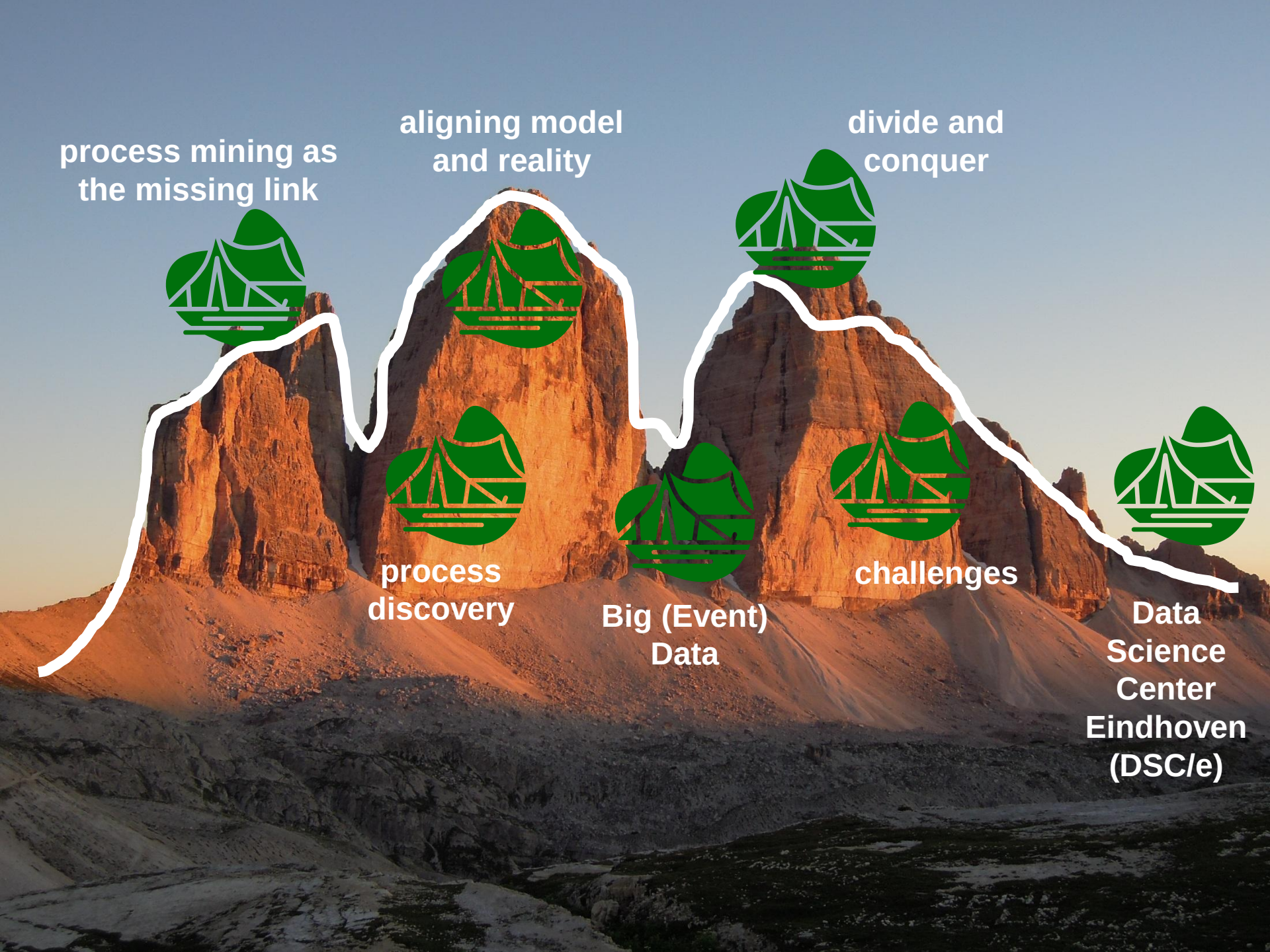


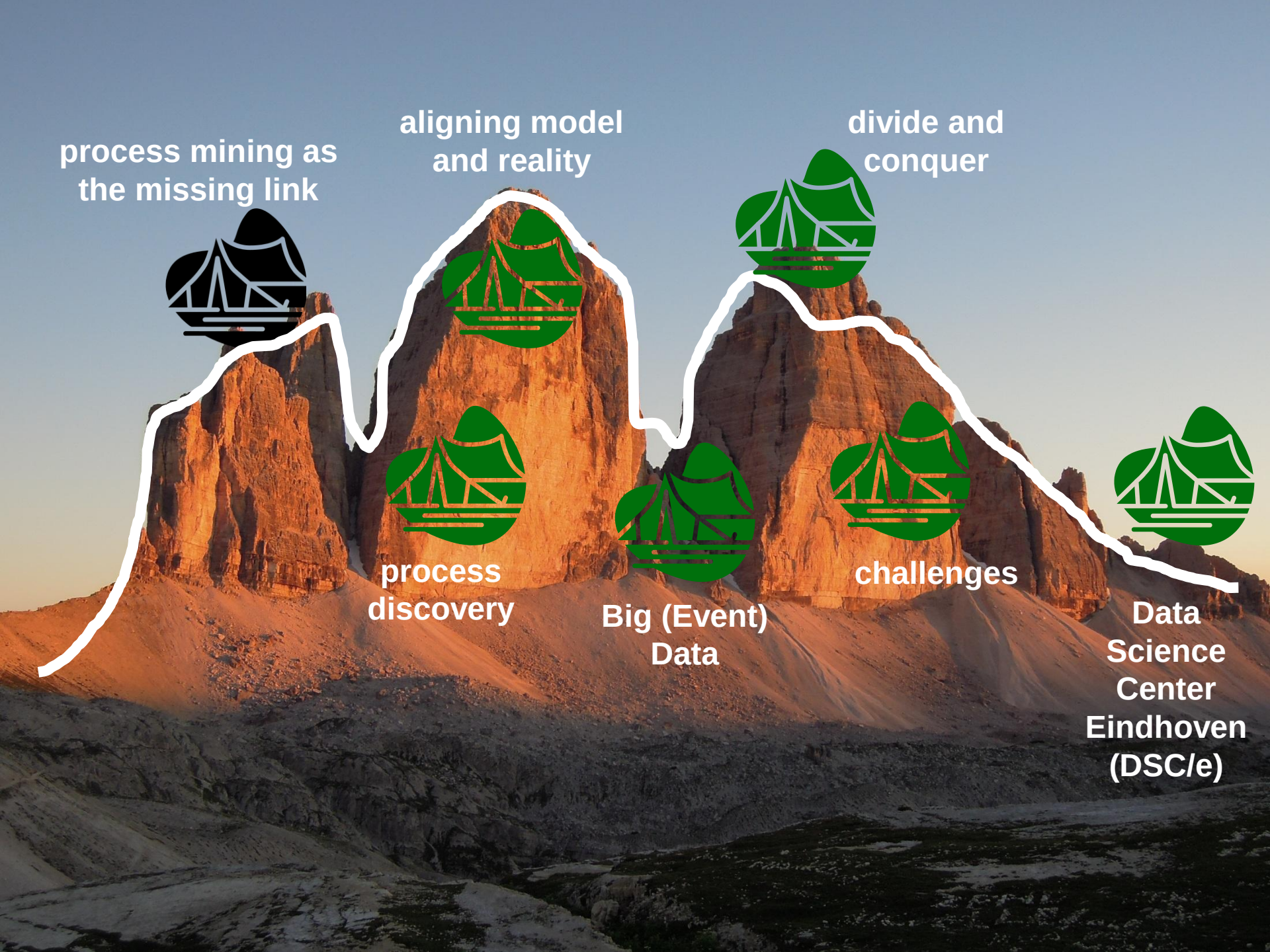
A FILM BY PHELIM MCALEER & ANN MCELHINNEY

MINE YOUR OWN BUSINESS

WWW.MINEYOURBUSINESS.ORG


Mine your own business:
Turning big data into real value


process mining as the missing link
aligning model and reality
divide and conquer
process discovery
Big (Event) Data
challenges
Data Science Center Eindhoven (DSC/e)


process mining as the missing link
aligning model and reality
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process discovery
Big (Event) Data
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Data Science Center Eindhoven (DSC/e)

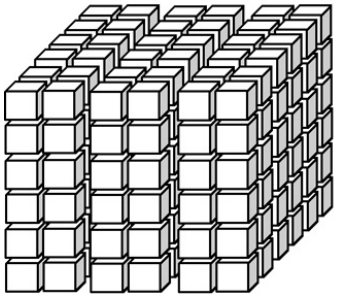
process model analysis

(simulation, verification, optimization, gaming, etc.)

performance-oriented questions, problems and solutions

process mining

compliance-oriented questions, problems and solutions



data-oriented analysis

(data mining, machine learning, business intelligence)


www.olifantenpaadjes.nl
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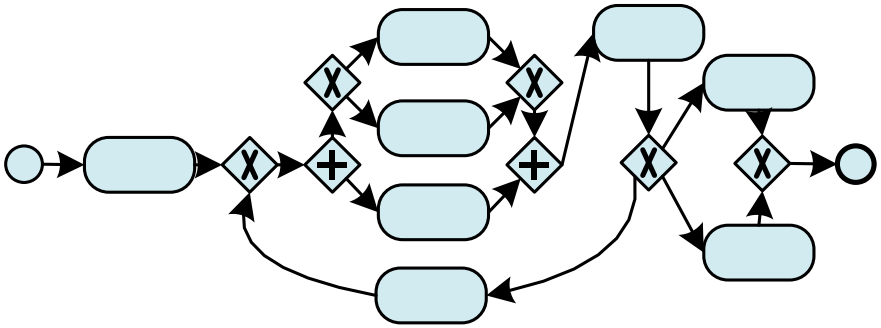
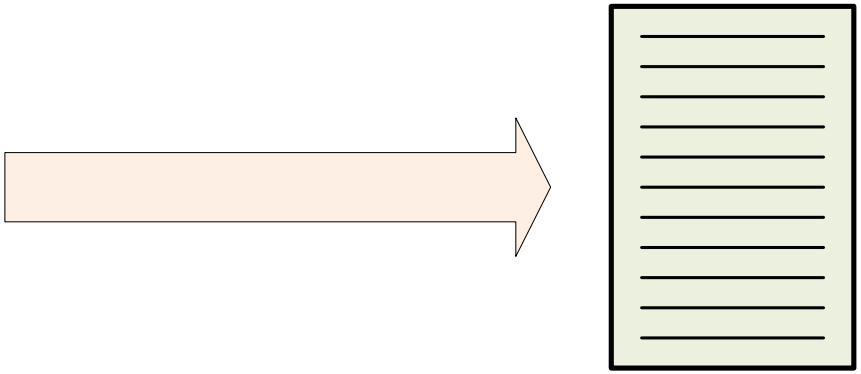
清華大學
TSINGHUA UNIVERSITY
小草对您微微笑
请您把路绕一绕
KEEP OFF GRASS
绿色大学办公室
修缮中心园林科


let's play

Play-Out

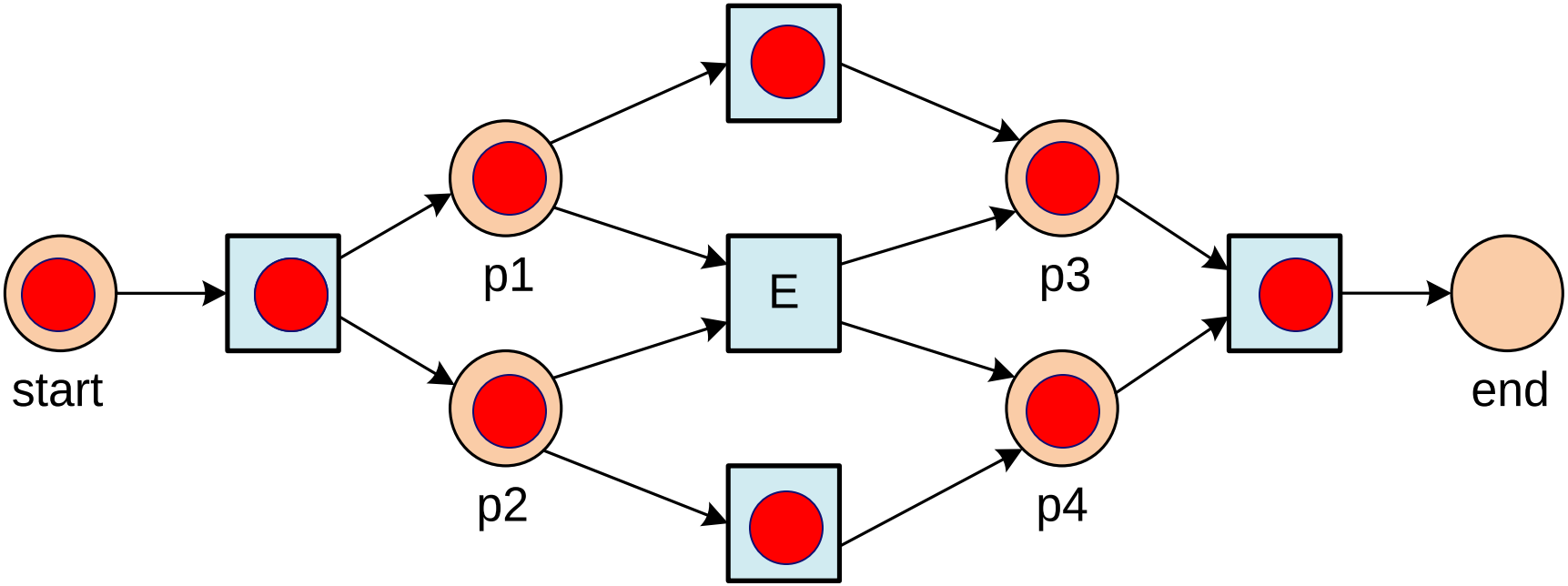


process model



event log

Play-Out (Classical use of models)

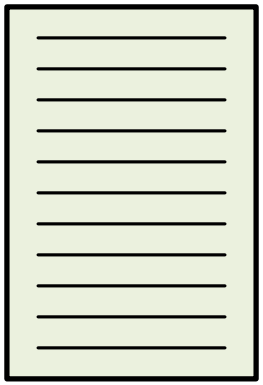


A B C D A E D A E D

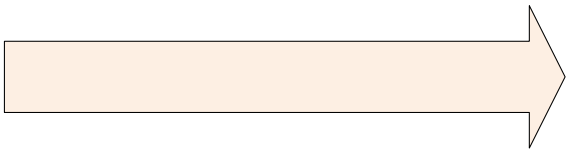
A B C D A C B D

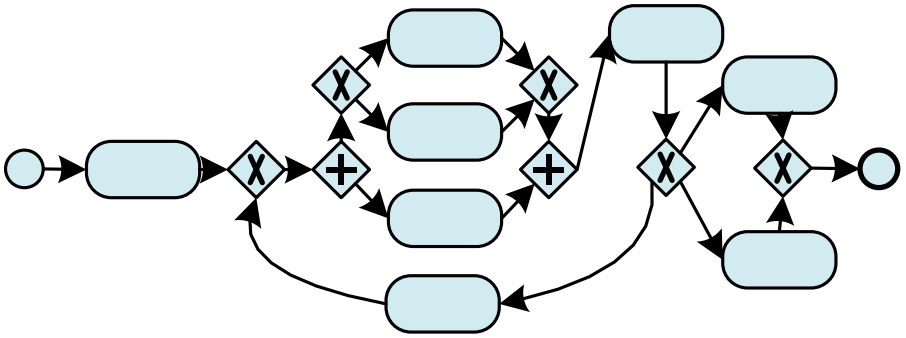
A C B D A E D A C B D

Play-In



event log





process model

Play-In

A B C D

A E D

A E D

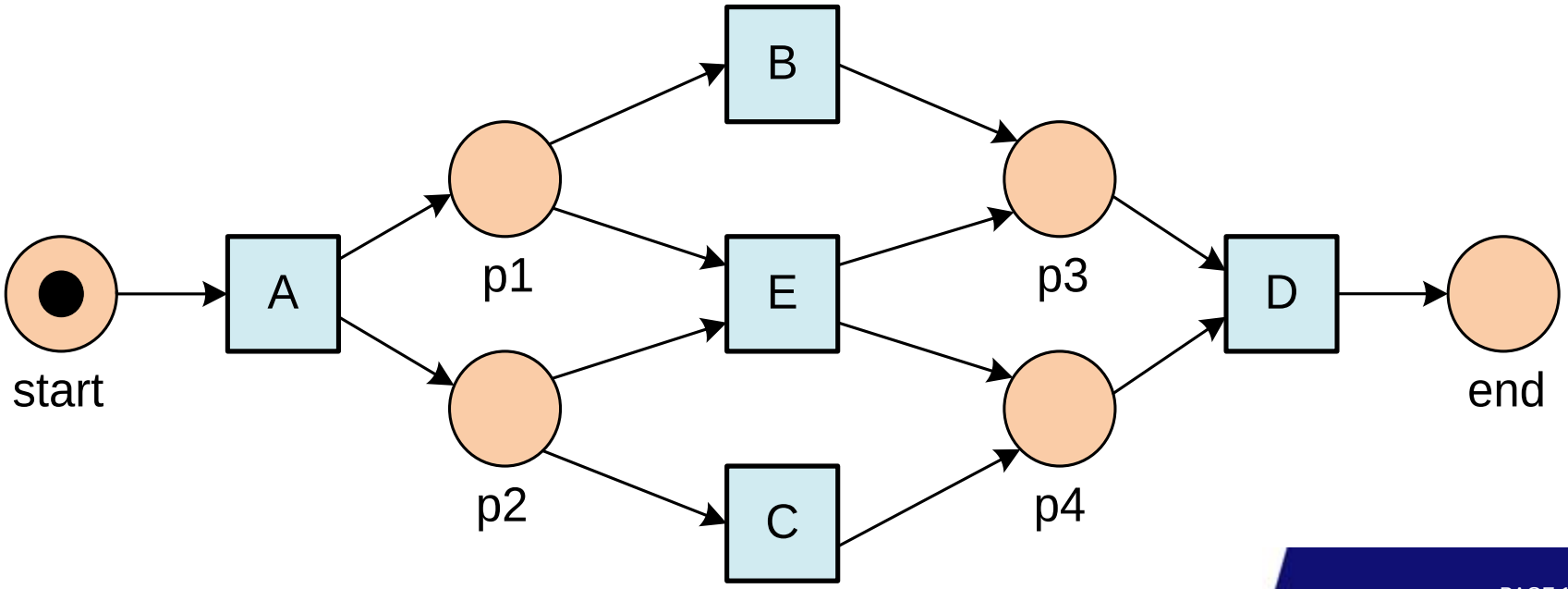
A B C D

A C B D

A C B D

A E D

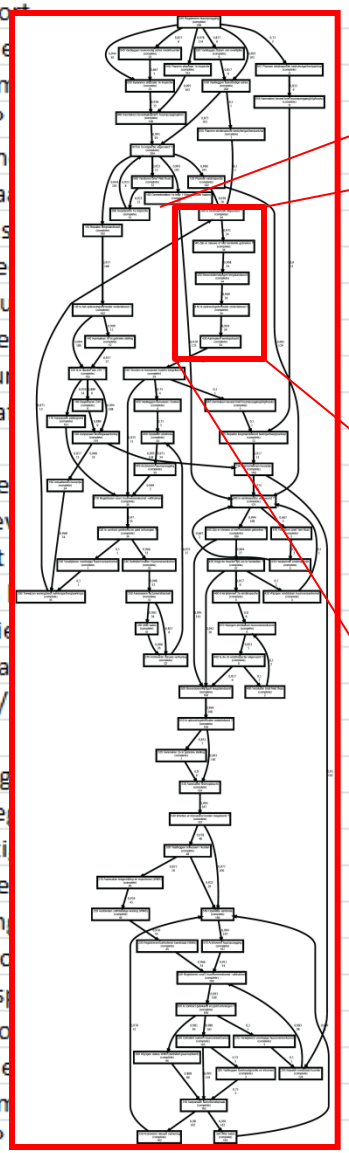
A C B D

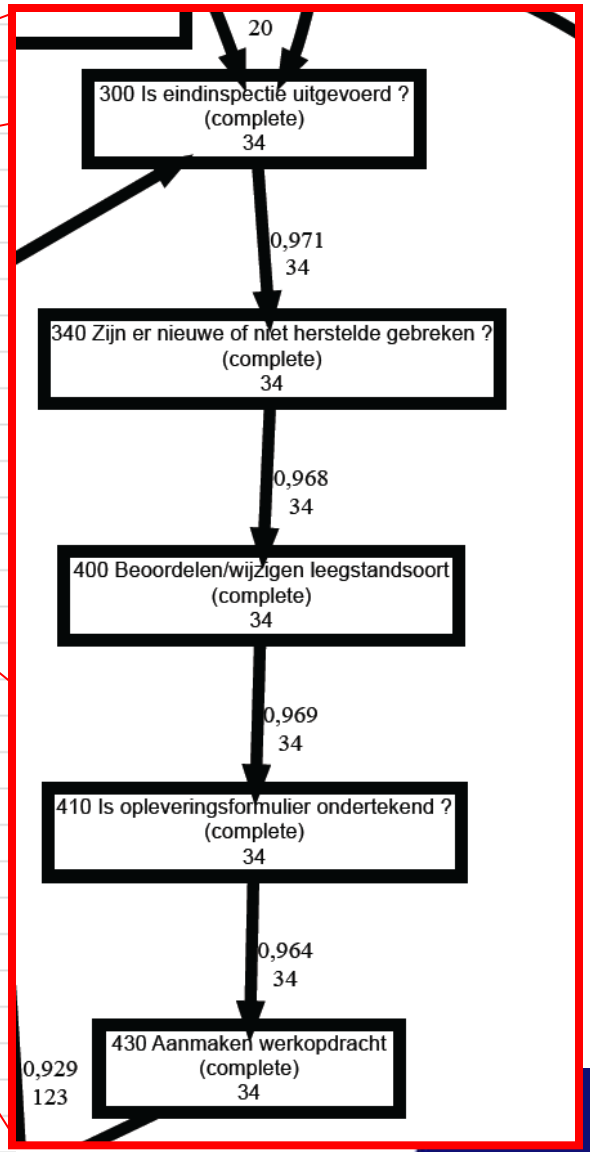


Example Process Discovery

(Vestia, Dutch housing agency, 208 cases, 5987 events)

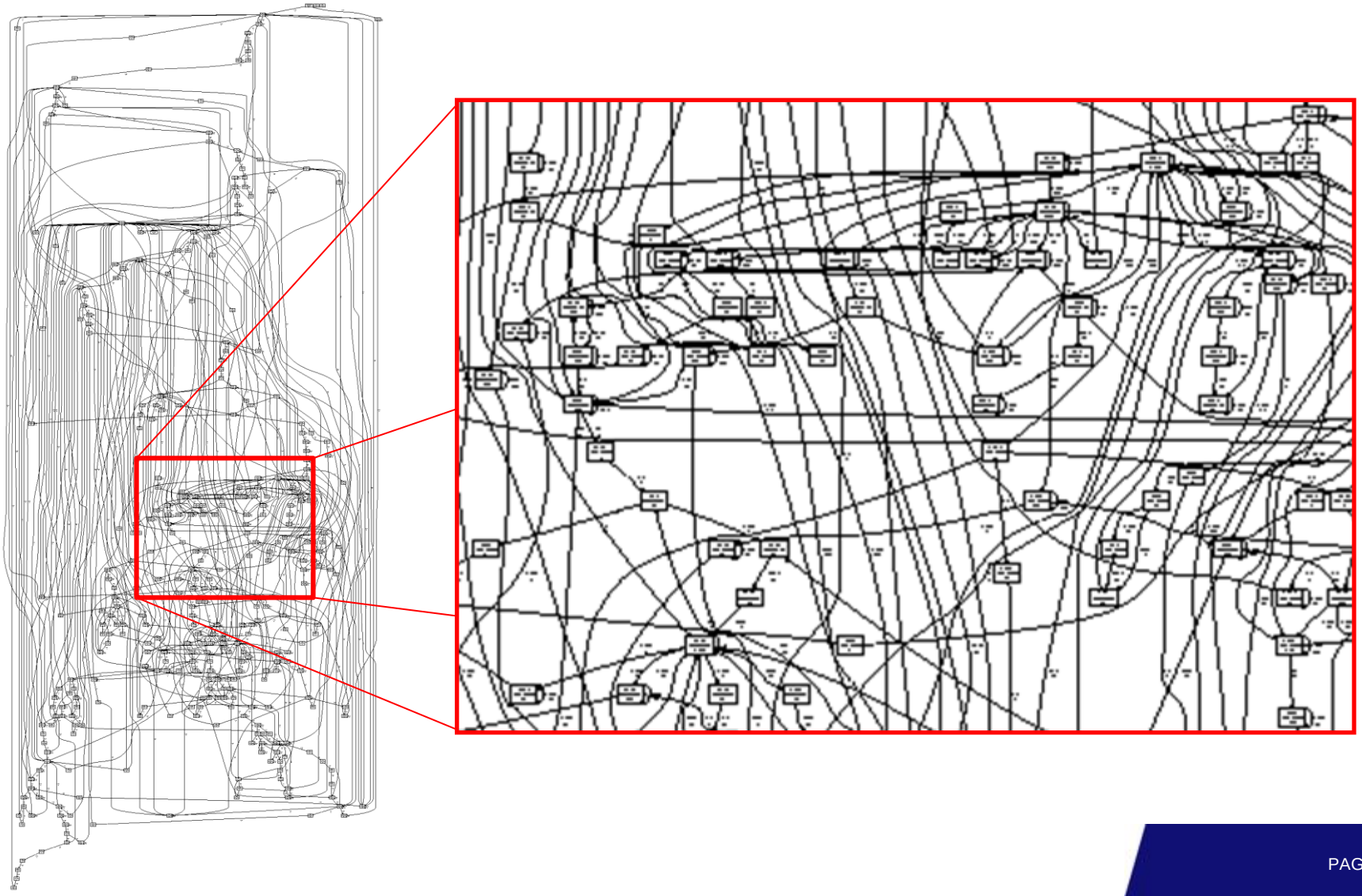
117315	110 Bepalen leegstandsoo	16.05.2007 14:06:23
117315	120 Plannen eindinspectie	16.05.2007 14:36:01
117315	130 Is het opleveringsform	23.05.2007 09:41:40
117315	150 Is er sprake van ZAV ?	23.05.2007 09:41:51
117315	170 Aanpassen plattegron	23.05.2007 11:57:18
117315	180 Aanpassen woningwa	23.05.2007 09:42:37
117315	190 Actualiseren huurprijs	23.05.2007 09:48:23
117315	200 Toewijzen woning/be	23.05.2007 09:48:29
117315	210 Registreren voorl. huu	10.09.2007 16:24:36
117315	220 Is contract getekend e	11.09.2007 14:56:18
117315	240 Definitief maken Huur	31.03.2008 16:17:12
117315	250 Aanpassen factureera	09.09.2008 15:39:59
117315	260 After sales	09.09.2008 16:51:24
117315	270 Archiveren nieuwe ve	10.09.2008 07:52:08
117315	300 Is eindinspectie uitgev	07.06.2007 14:47:04
117315	340 Zijn er nieuwe of niet	07.06.2007 14:47:06
117315	400 Beoordelen/wijzigen l	07.06.2007 14:51:16
117315	410 Is opleveringsformulie	07.06.2007 14:51:26
117315	430 Aanmaken werkopdra	11.06.2007 09:21:39
117315	440 Worden er bonussen/	11.06.2007 09:21:49
117315	460 Opstellen eindnota	08.08.2007 16:18:26
117315	470 Archiveren huuropzeg	09.08.2007 14:42:23
119763	010 Registreren huuropze	09.05.2007 11:19:14
119763	030 Vastleggen toekomsti	09.05.2007 12:25:01
119763	050 Inplannen afspraak 1e	09.05.2007 11:59:52
119763	060 Aanmaken bevestigin	09.05.2007 12:31:57
119763	070 Is 1e inspectie uitgevo	16.05.2007 13:04:26
119763	100 Gereedmelden 1e insp	16.05.2007 13:43:39
119763	110 Bepalen leegstandsoo	16.05.2007 13:43:28
119763	120 Plannen eindinspectie	16.05.2007 13:42:58
119763	130 Is het opleveringsform	16.05.2007 13:34:49
119763	150 Is er sprake van ZAV ?	16.05.2007 13:34:56





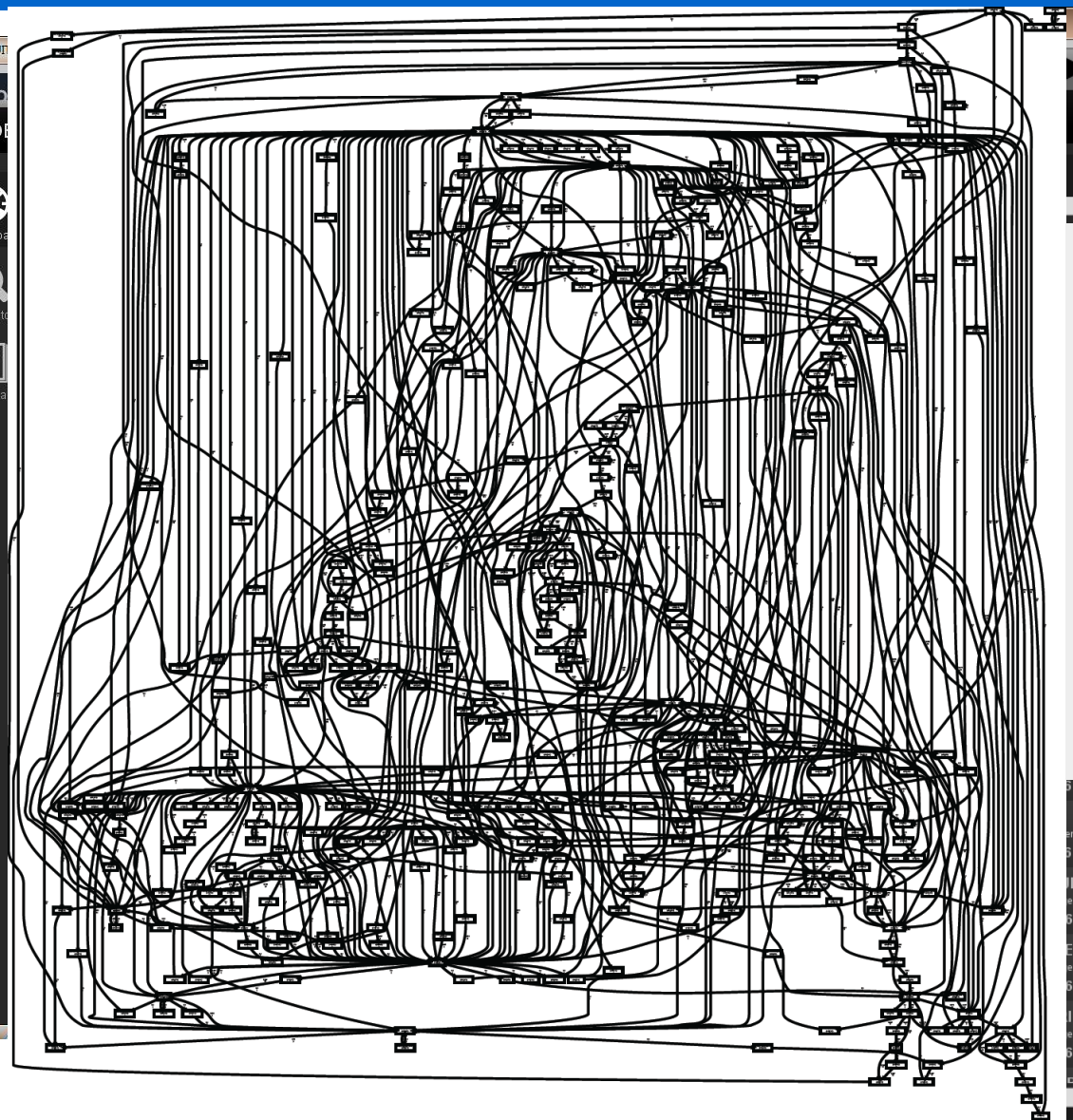
Example Process Discovery

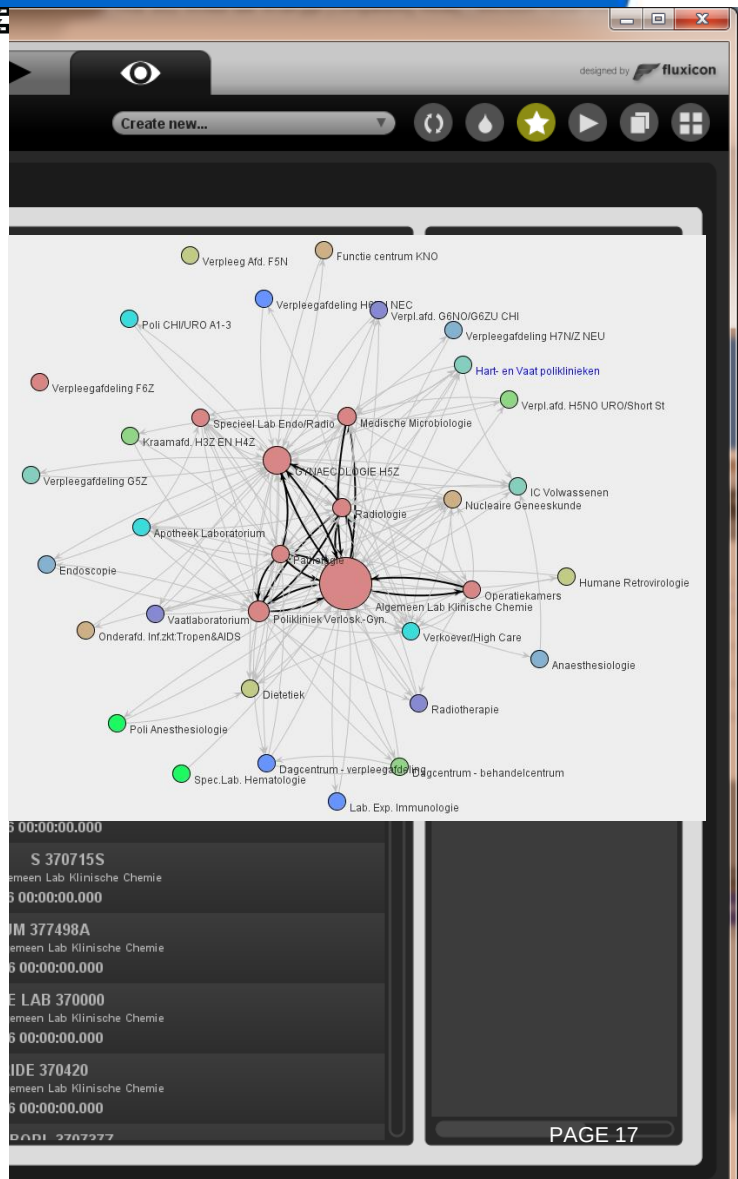
(ASML, test process lithography systems, 154966 events)



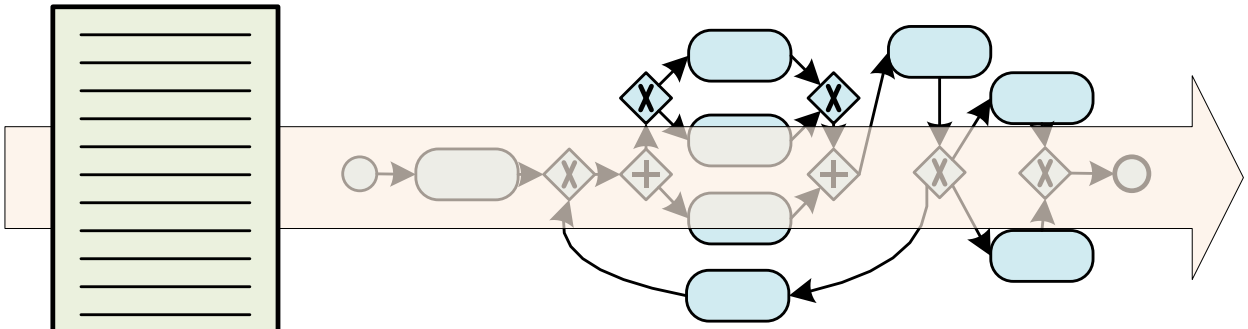
Example Process Discovery

(AMC, 627 gynecological oncology patients, 24331 events)





Replay



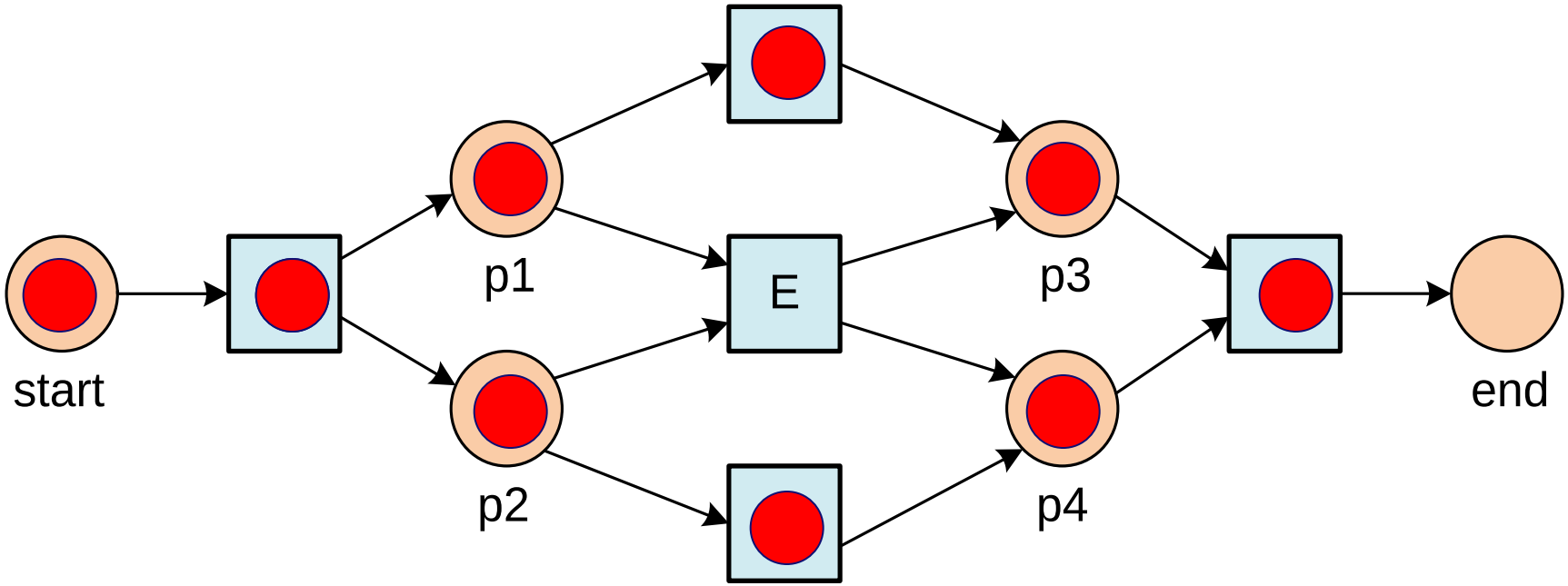
event log

process model

- extended model showing times, frequencies, etc.
- diagnostics
- predictions
- recommendations

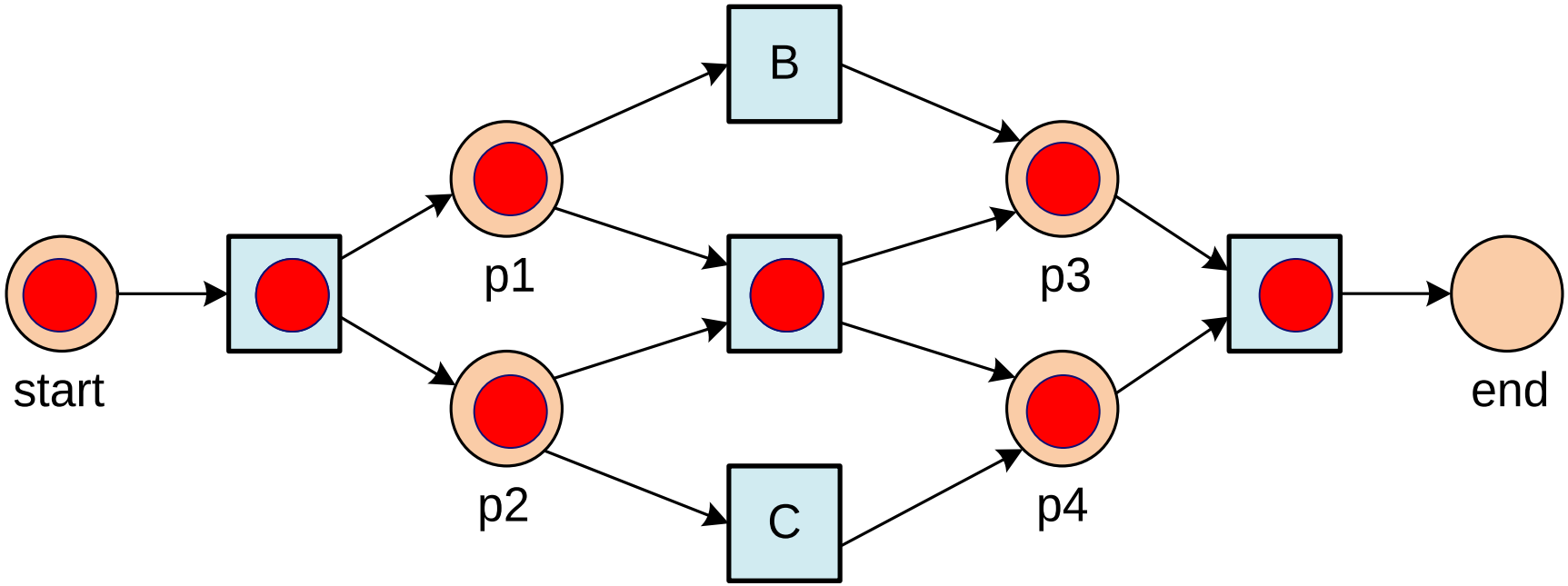
Replay

A B C D



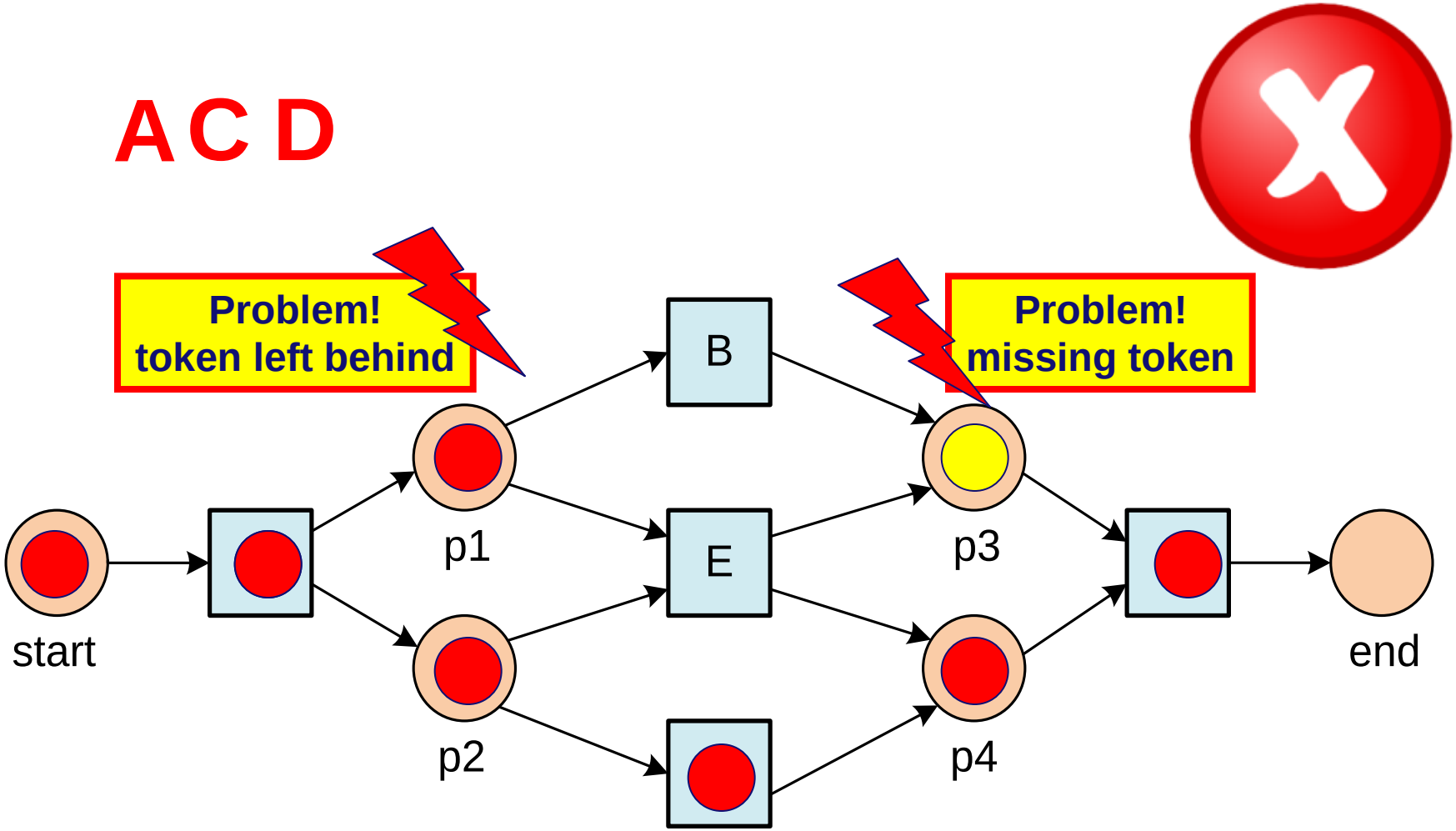
Replay

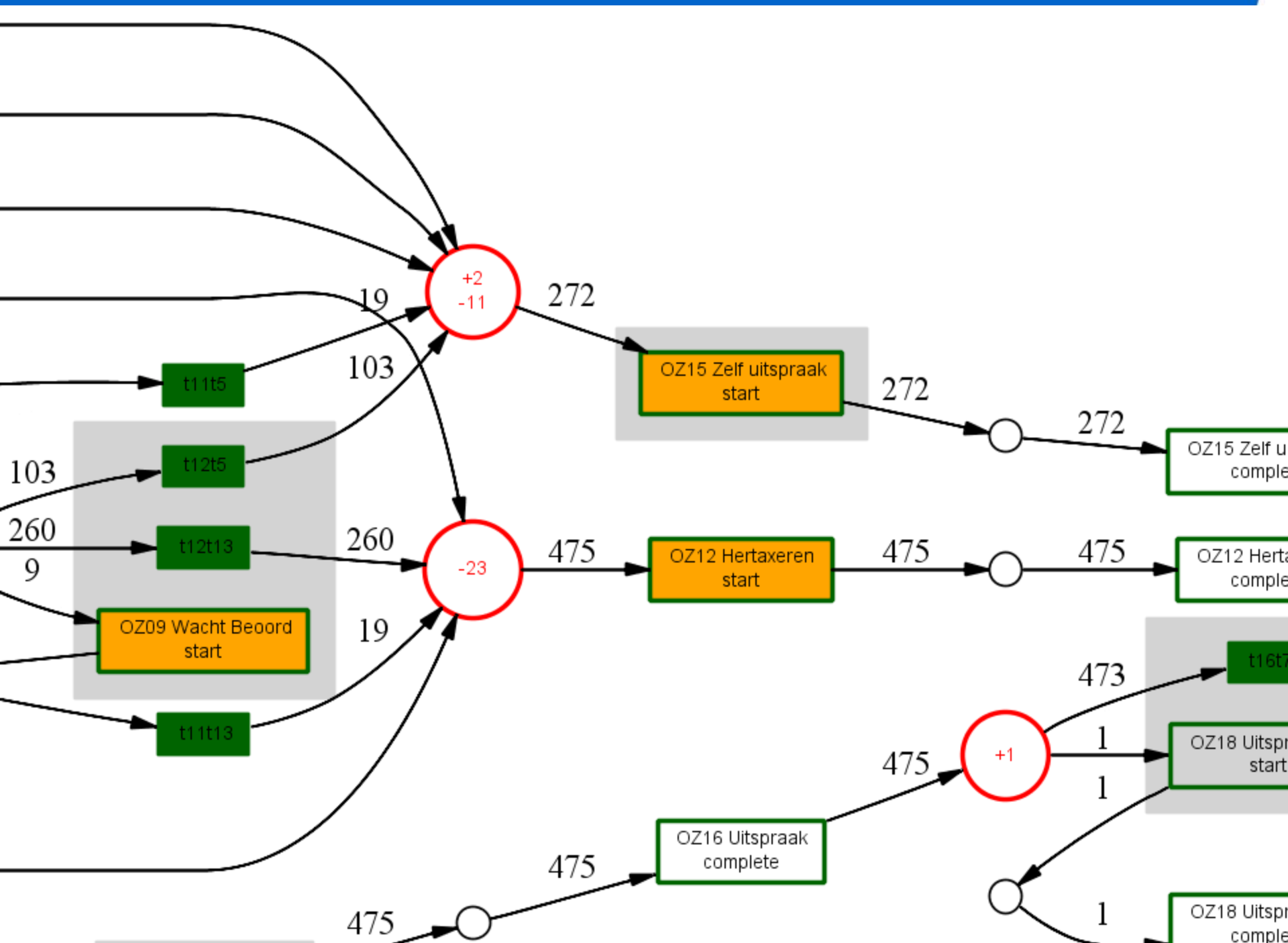
A E D



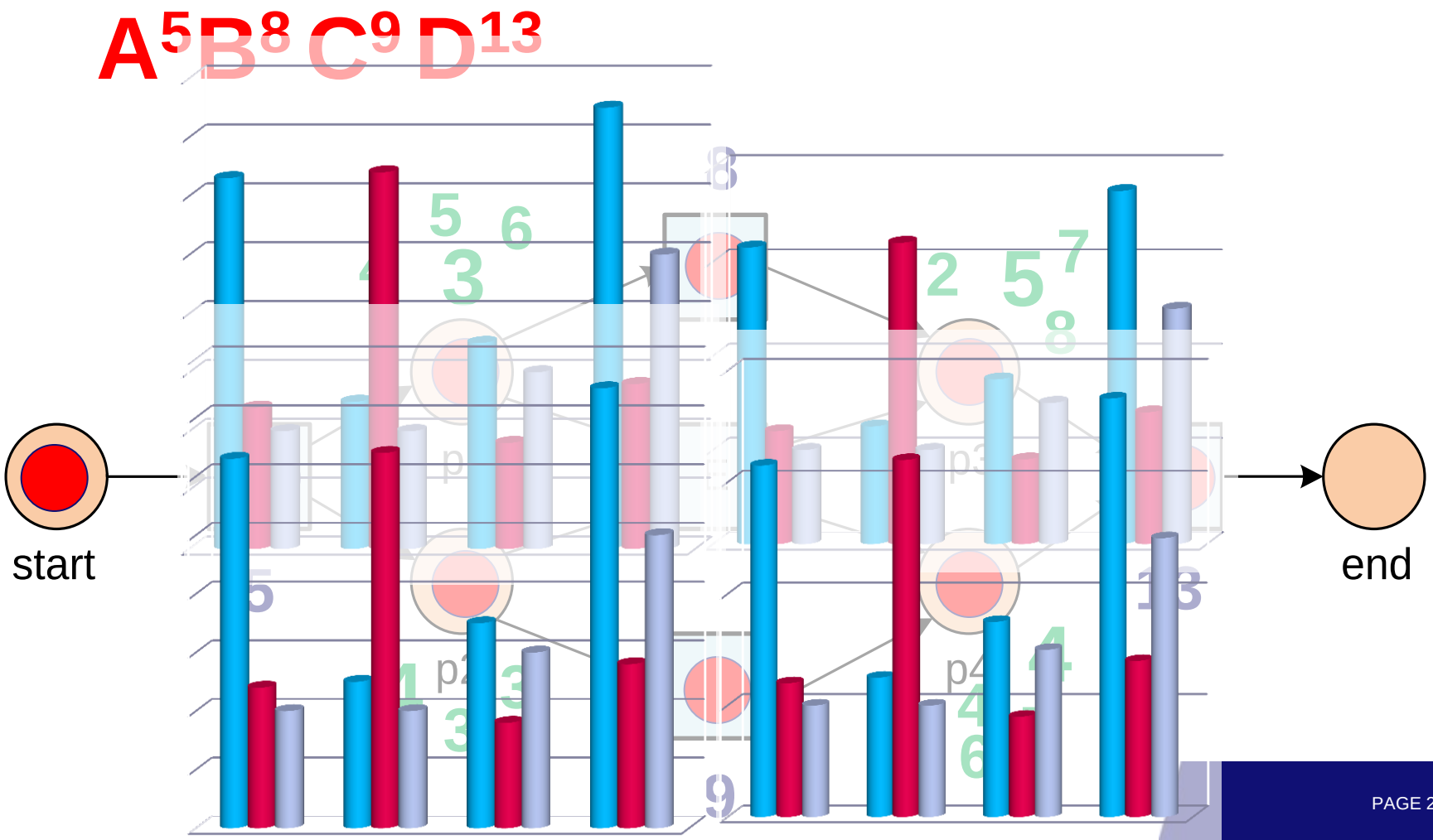
Replay can detect problems

A C D



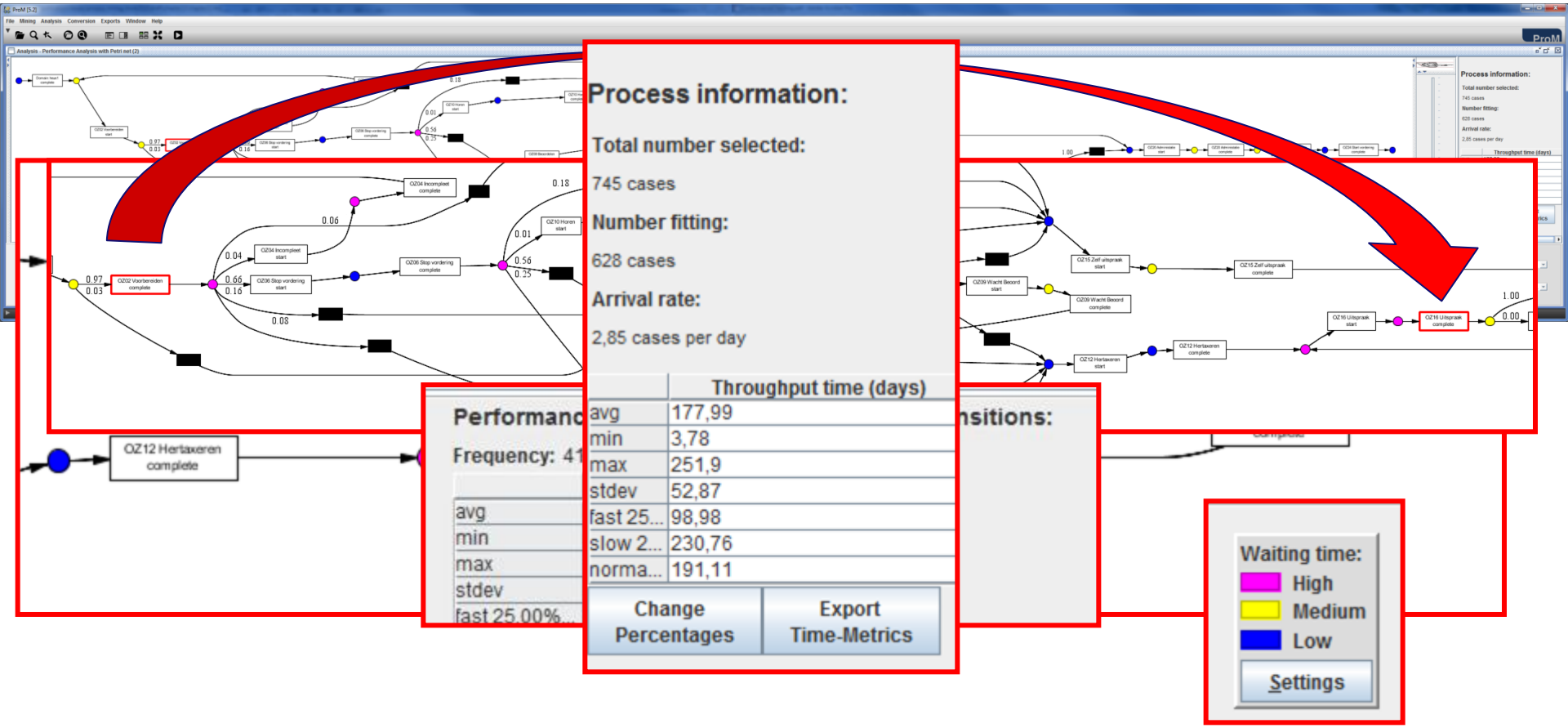

+2
-11
19
103
272
t11t5
t12t5
103
260
9
t12t13
OZ09 Wacht Beoord start
t11t13
260
19
-23
475
OZ12 Hertaxeren start
OZ15 Zelf uitspraak start
272
272
272
OZ15 Zelf u
comple
475
475
OZ12 Herta
comple
473
1
1
+1
475
OZ16 Uitspraak complete
475
475
OZ18 Uitspr
start
1
OZ18 Uitspr
comple

Replay can extract timing information



Performance Analysis Using Replay

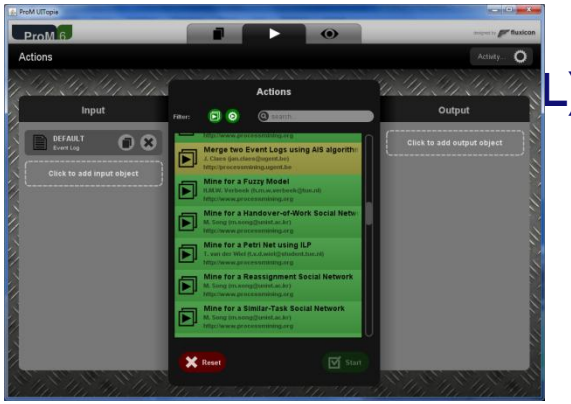
(WOZ objections Dutch municipality, 745 objections, 9583 event, f= 0.988)



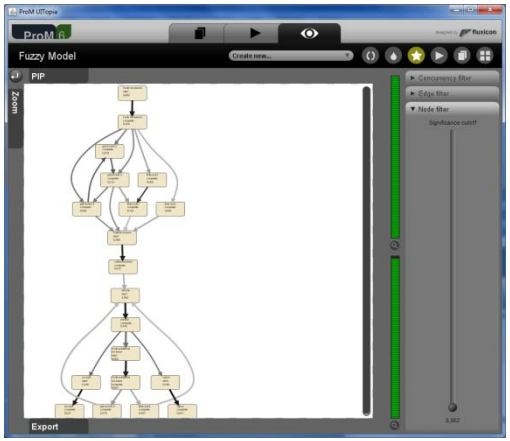
Models are like the glasses required to see and understand event data!

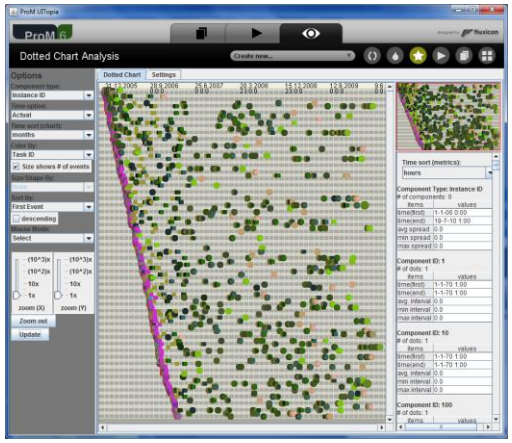
600+ plug-ins available covering the whole process mining spectrum

ProM
process mining workbench



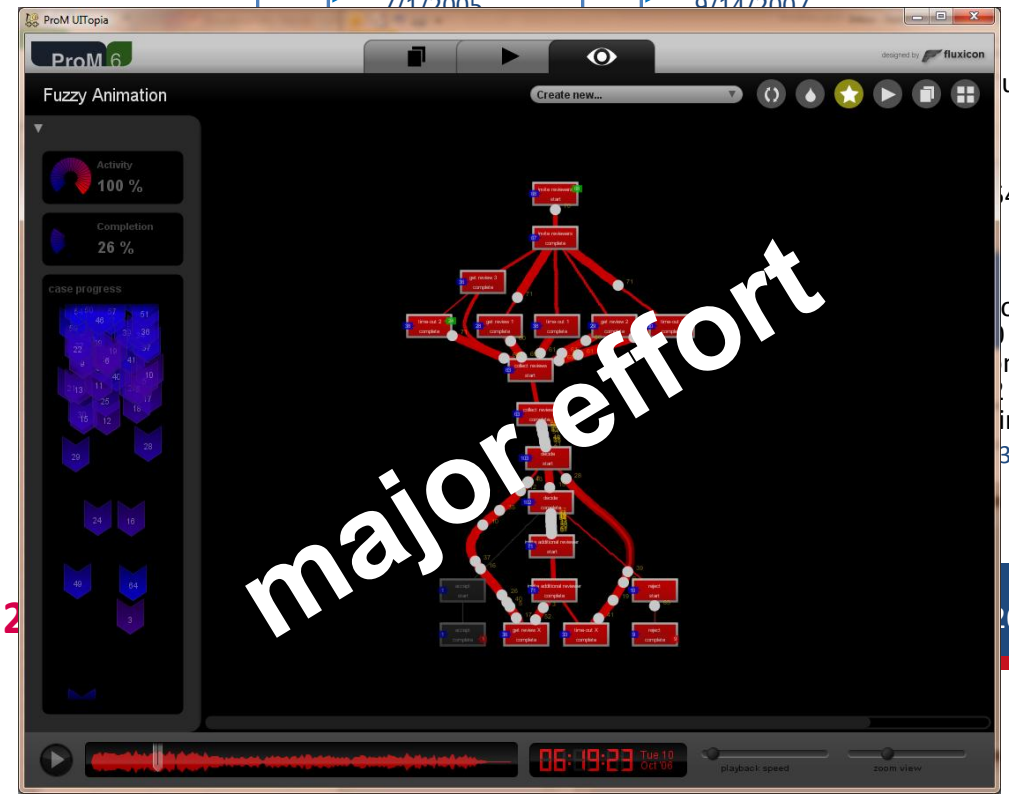
L)





Download from: www.processmining.org

ProM tool development



ProM 1.1 (29 plug-ins: 7 analysis, 3 conversion, 9 export, 4 import, 0 filter, 6 mining)
1/1/2005

ProM 2.0
7/1/2005

ProM 4.1 (149 plug-ins)
4/16/2007

ProM 4.2 (175 plug-ins)
9/14/2007

ug-ins)

4 plug-ins)

oM 5.2 (274 plug-ins:
) analysis, 44
nversion, 49 export,
import, 32 filter, 37
ining)
3/2009

ProM 6.0 (170 plug-ins distributed over 50 packages)
9/27/2010

ProM 6.1 (322 plug-ins distributed over 57 packages)
9/5/2011

ProM 6.2 (standard, 468 plug-ins distributed over 68 packages)
8/16/2012

ProM 6.3 (extended, 676 plug-ins distributed over 99 packages)
5/27/2013

2010 | 2011 | 2012 | 2013 **2013**

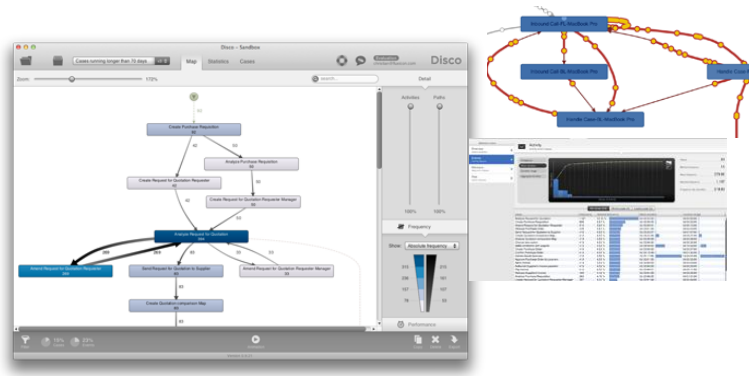
Today

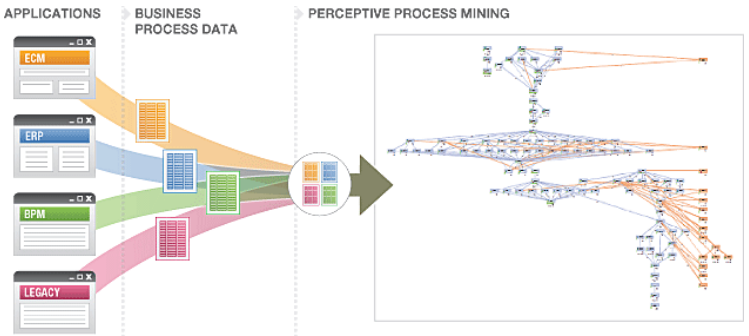
Thanks to all that contributed!

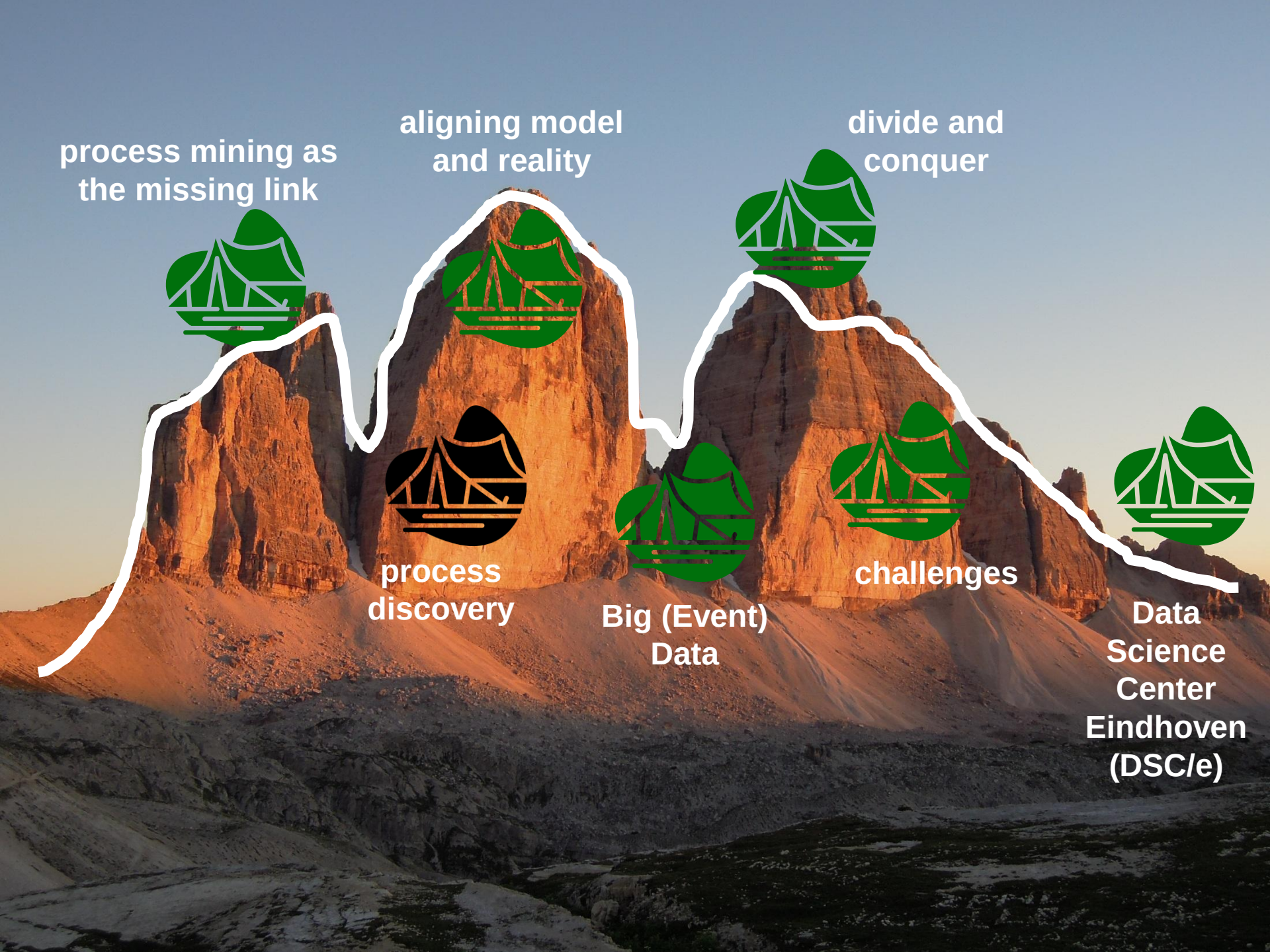
ProM team in 2007

Commercial Alternatives

- **Disco** (Fluxicon)
- **Perceptive Process Mining** (before Futura Reflect and BPM|one)
- ARIS Process Performance Manager
- QPR ProcessAnalyzer
- Interstage Process Discovery (Fujitsu)
- Discovery Analyst (StereoLOGIC)
- XMAnalyzer (XMPro)
- …



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Language identification in the limit (Mark Gold 1967)

A language is learnable in the limit if there exists a perfect child that generates only finitely many hypotheses.

Language identification in the limit by E Mark Gold, Information and Control, 10(5):447–474, 1967.

Learning is not easy …

- Even simple languag…
  regular languag…
  learnable i…
- M… …with or
  …ive examples,
  …icles, etc.

Classical approaches (before 1998) did not consider concurrency and definitely not end-to-end business process models.

…tence ≅ trace in event log

language ≅ process model

Process discovery algorithms
(small selection)

automata-based learning

distributed genetic mining

heuristic mining

language-based regions

genetic mining

state-based regions

stochastic task graphs

LTL mining

ETM genetic algorithm

Inductive Miner (infrequent)

fuzzy mining

neural networks

mining block structures

hidden Markov models

α algorithm

conformal process graph

multi-phase mining

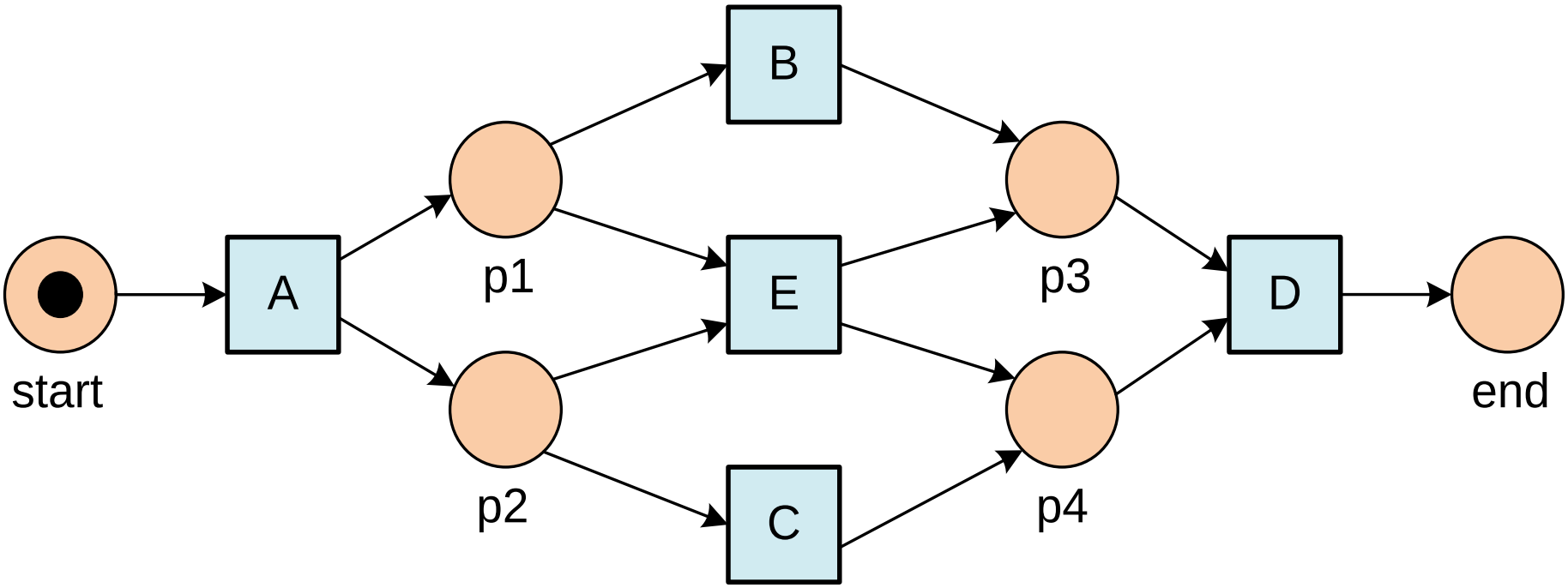
partial-order based mining

α# algorithm

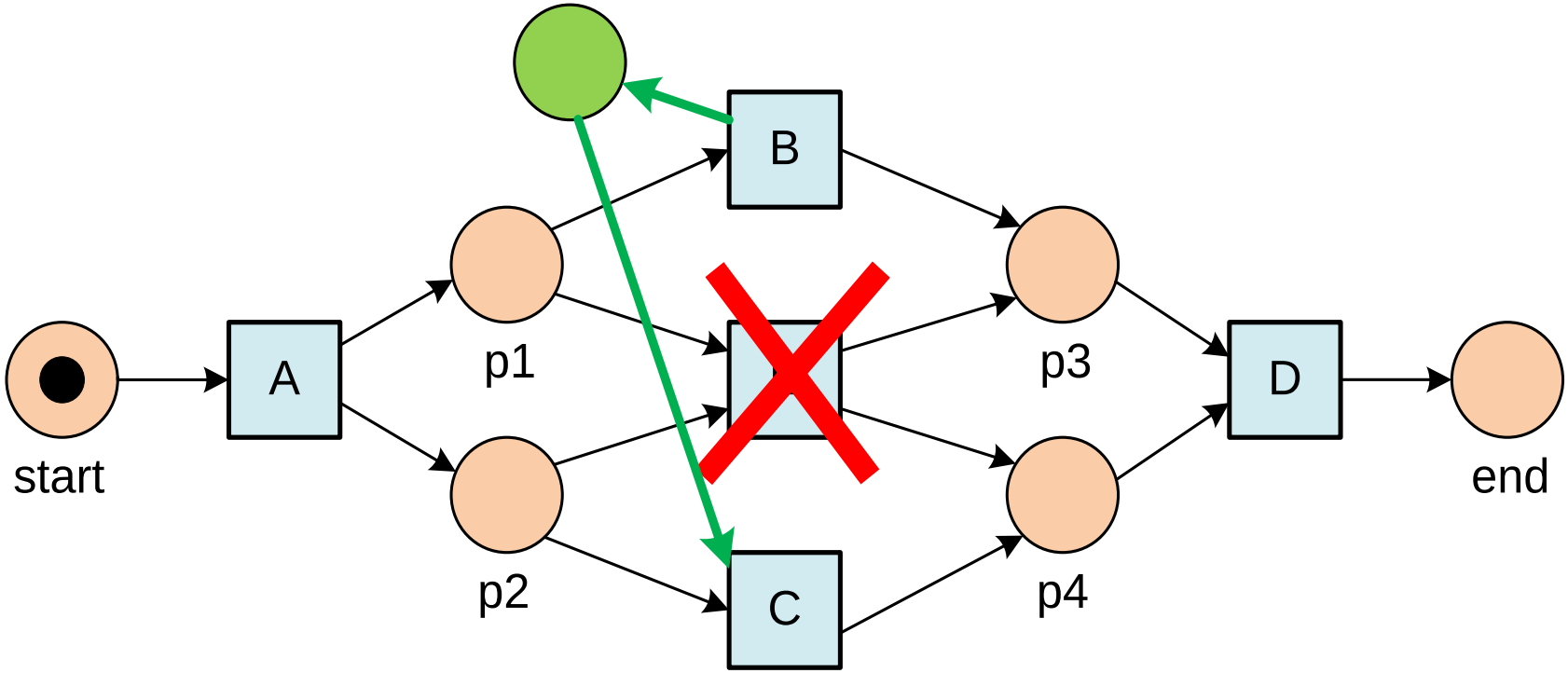
ILP mining

α++ algorithm

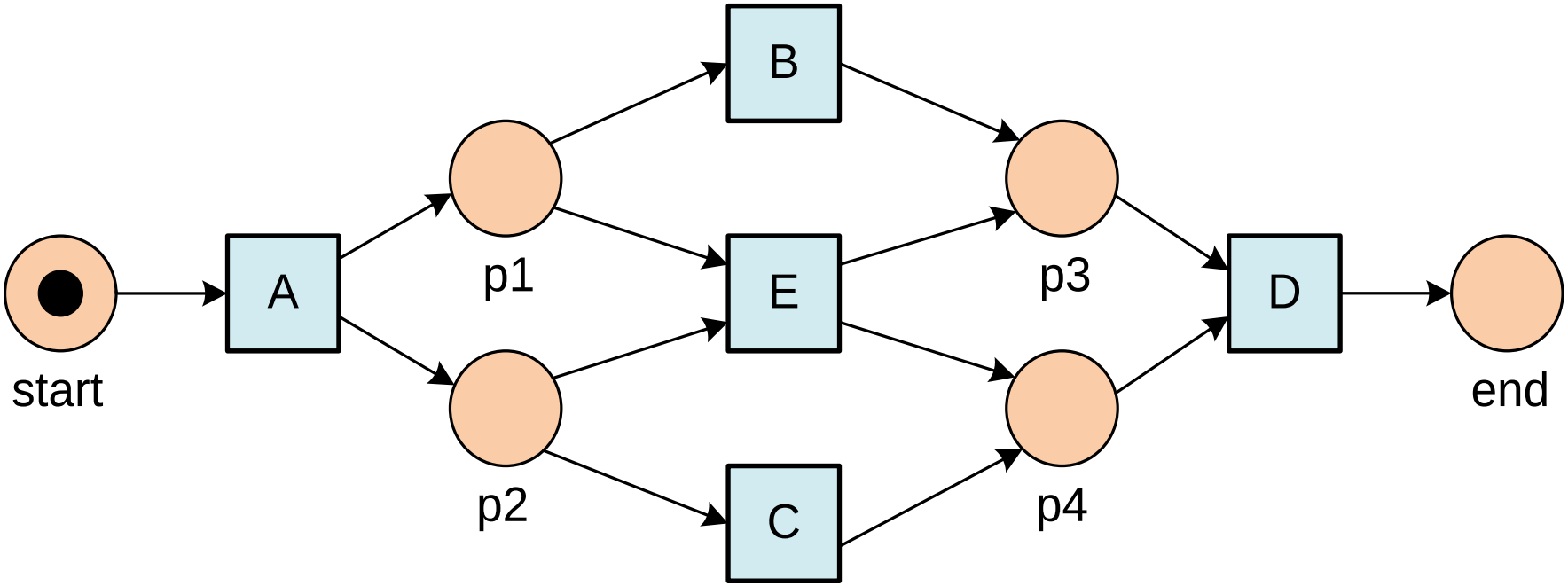
Quiz Question:
How to remove behavior?



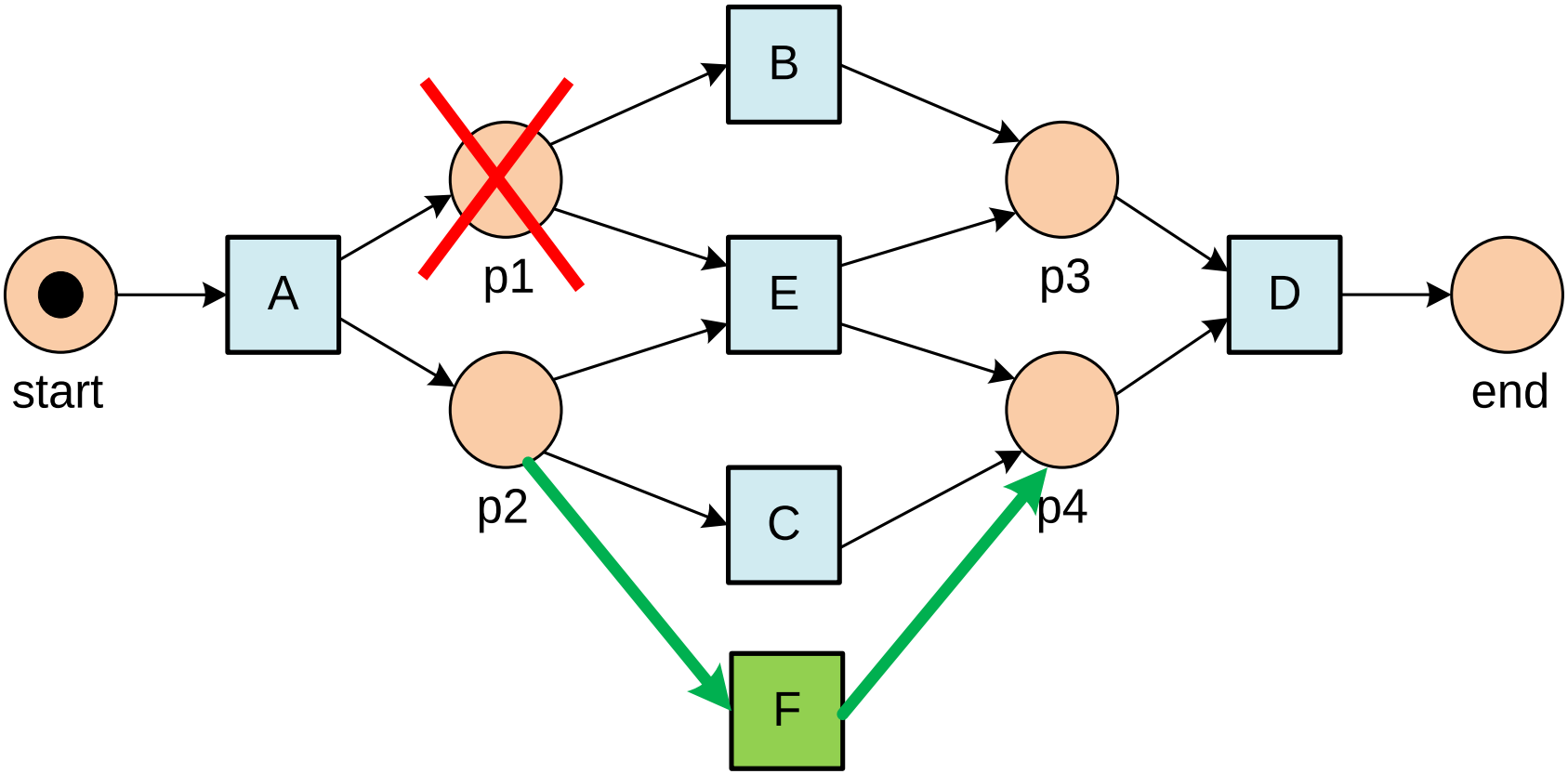
Answer:
Add places or remove transitions



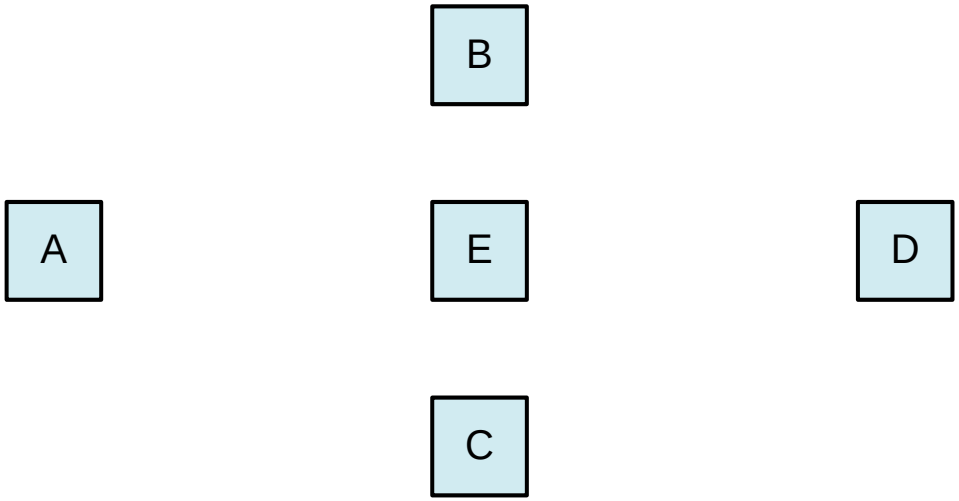
Quiz Question:
How to add behavior?



Answer:
Add transition or remove places!



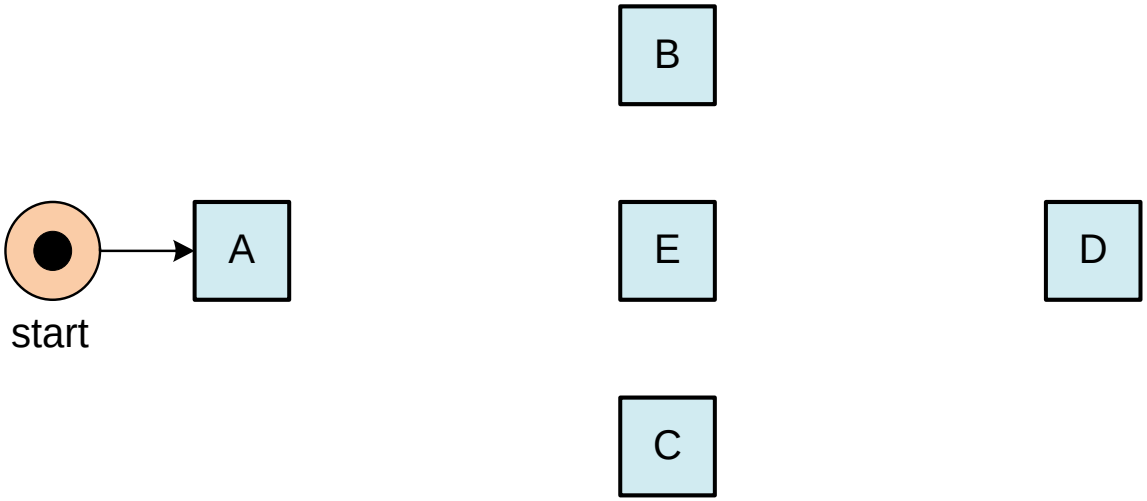
Places limit behavior



- **abcd**
- **ad**
- **abed**
- **abccd**
- **acbd**

- **aebcd**
- **aed**
- **aad**
- **caed**
- **aded**

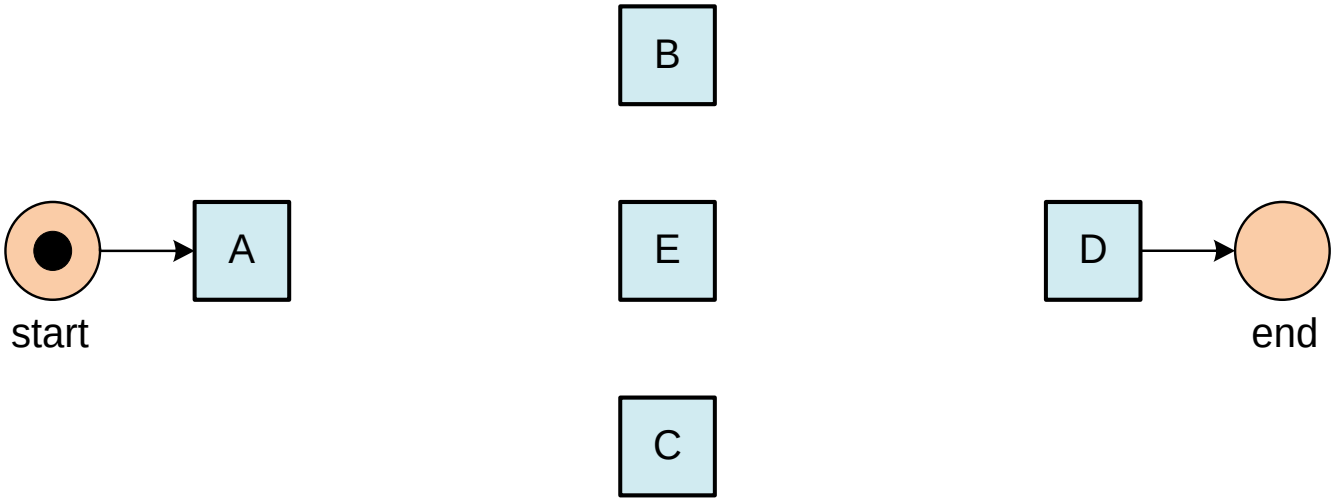
Places limit behavior



- **abcd**
- **ad**
- **abed**
- **abccd**
- **acbd**

- **aeccd**
- **aed**
- **aad**
- **caed**
- **aded**

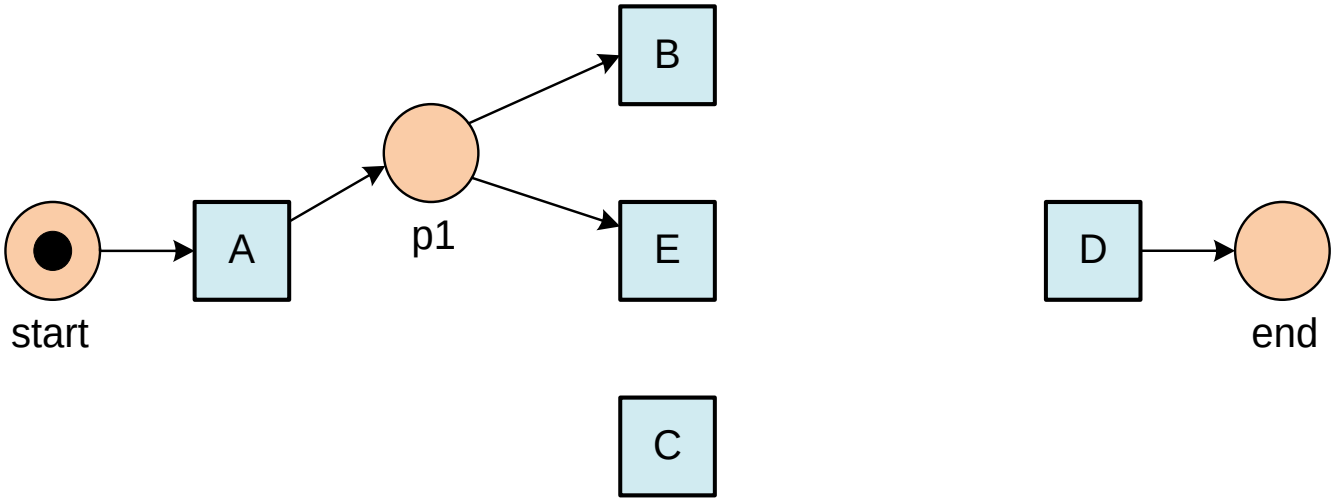
Places limit behavior



- abcd
- ad
- abed
- abccd
- acbd

- aebcd
- aed
- aad
- caed
- aded

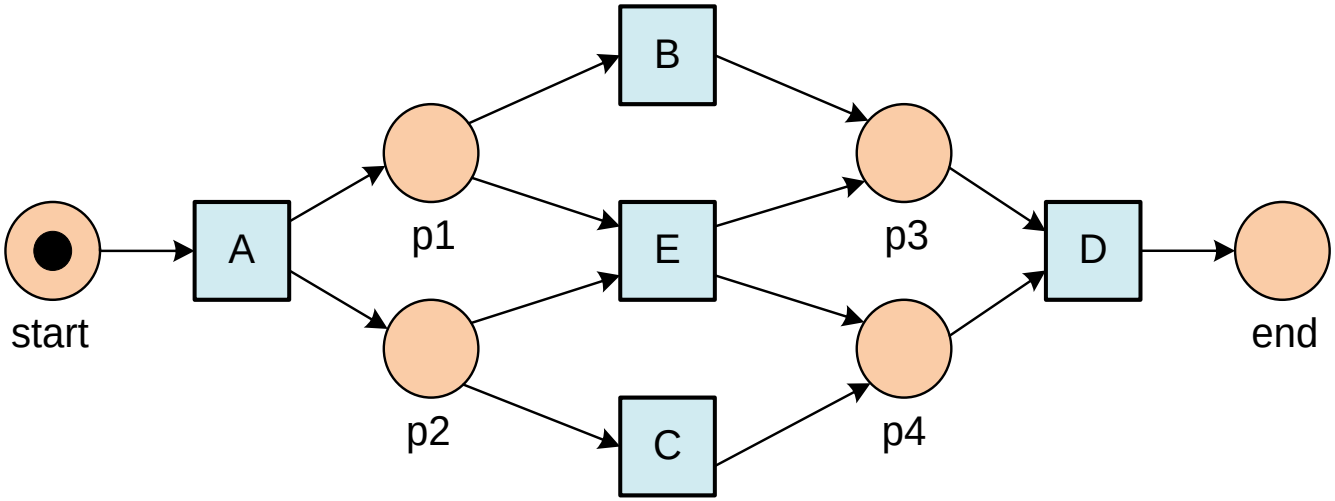
Places limit behavior



- **abcd**
- **ad**
- **abed**
- **abccd**
- **acbd**

- **aebcd**
- **aed**
- **aad**
- **caed**
- **aded**

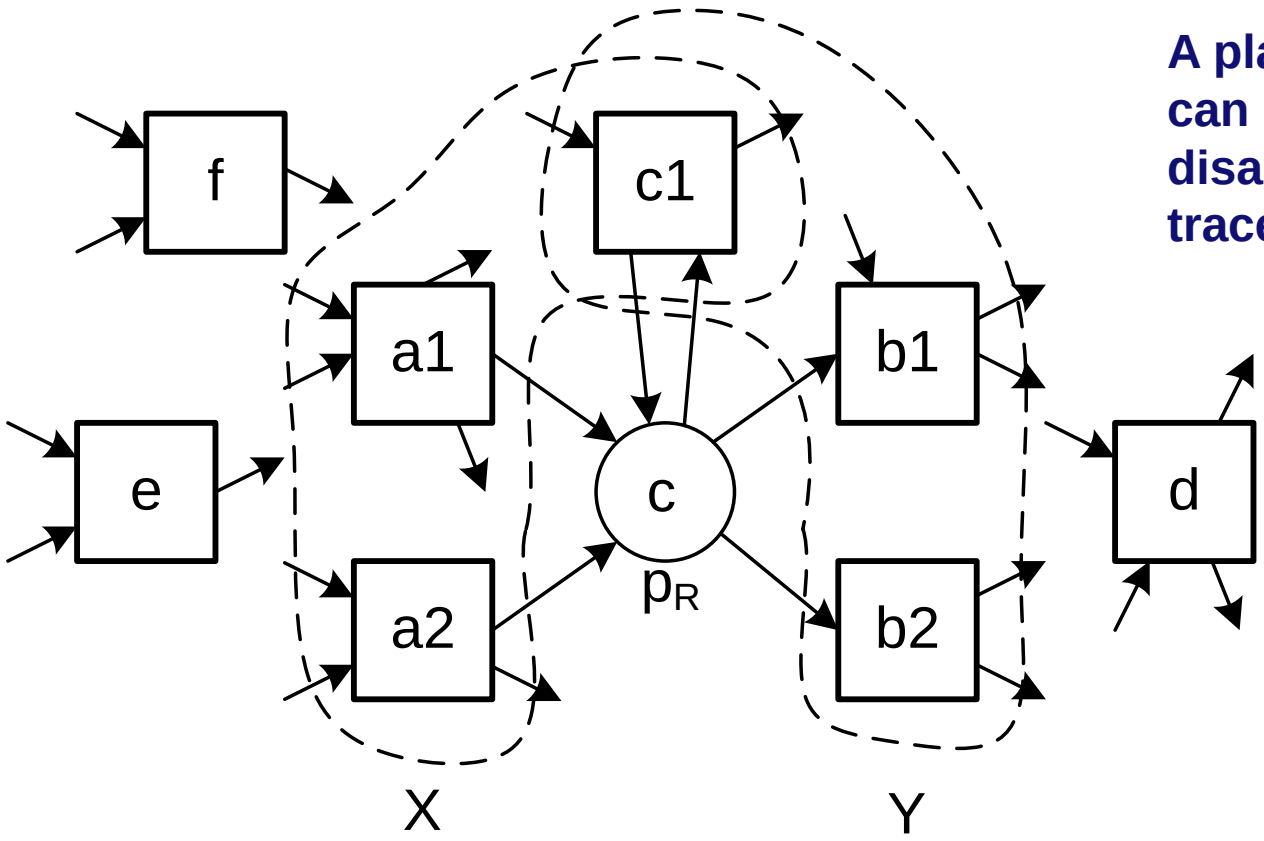
Places limit behavior



- **abcd**
- **ad**
- **abed**
- **abccd**
- **acbd**

- **aebcd**
- **aed**
- **aad**
- **caed**
- **aded**

Example: Process Discovery Using Language-Based Regions

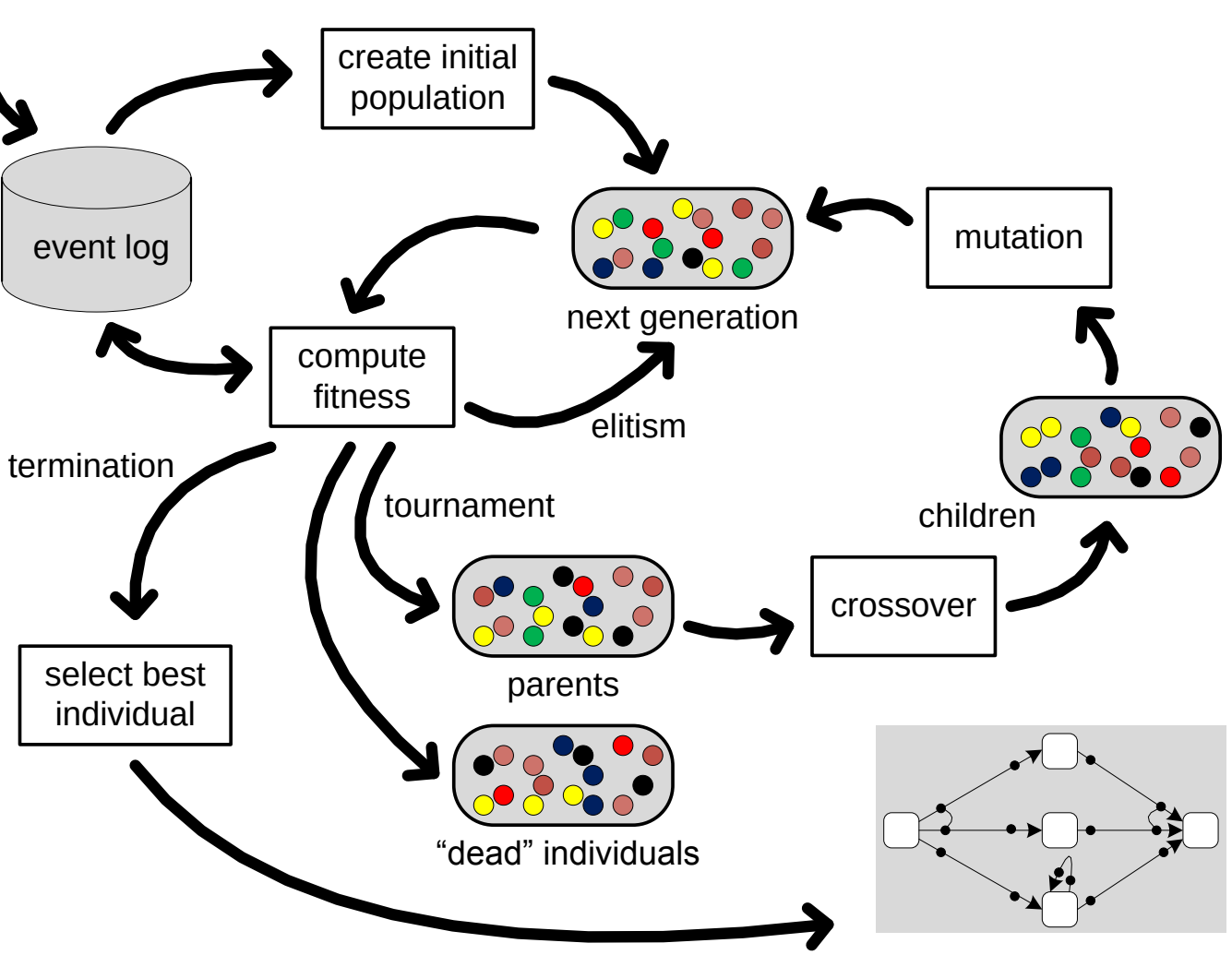


A place is feasible if it can be added without disabling any of the traces in the event log.

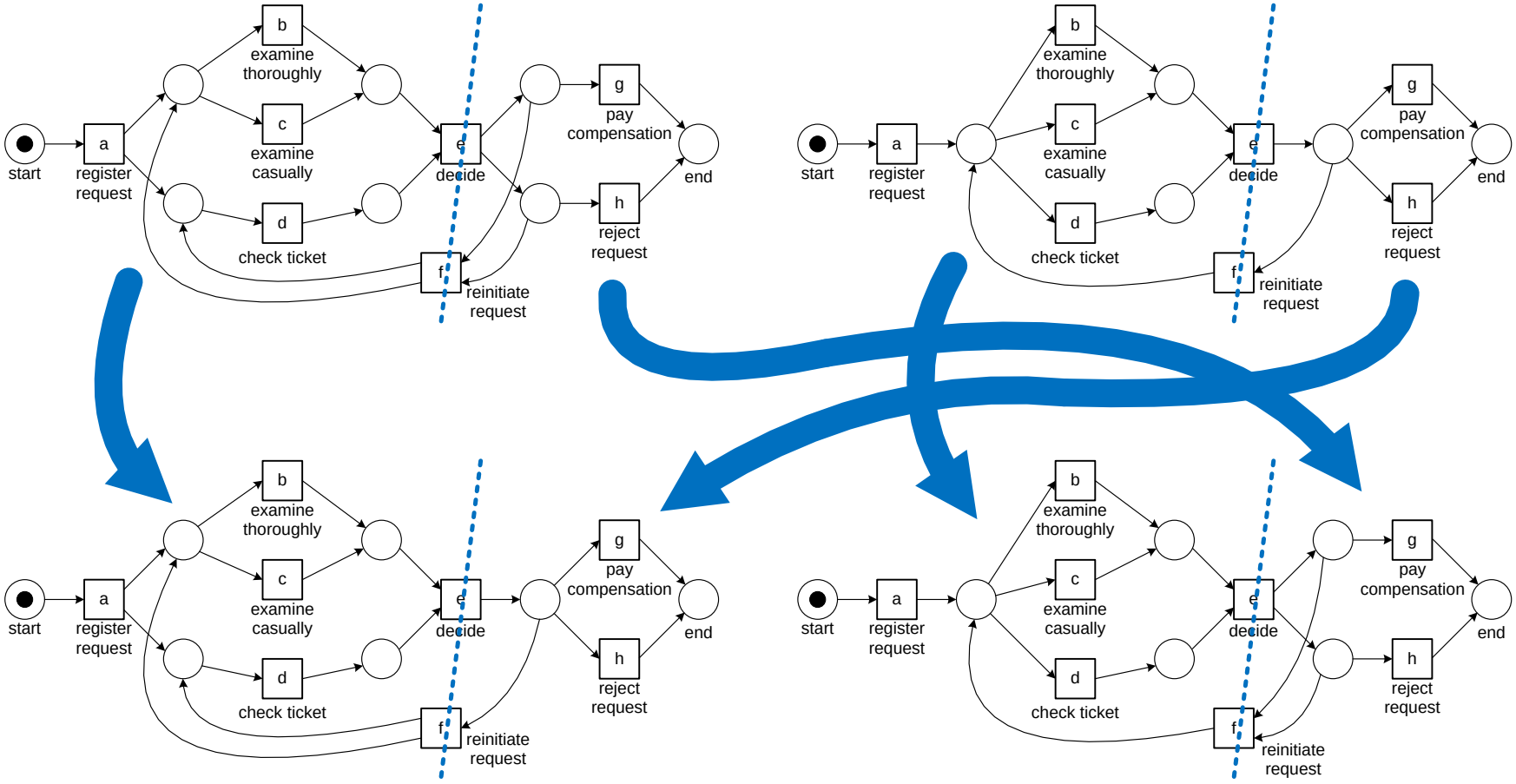
for any $\sigma \in L, k \in \{1, \ldots, |\sigma|\}, \sigma_1 = hd^{k-1}(\sigma), a = \sigma(k), \sigma_2 = hd^{k}(\sigma) = \sigma_1 \oplus a$:

$$c + \sum_{t \in X} \partial_{multiset}(\sigma_1)(t) - \sum_{t \in Y} \partial_{multiset}(\sigma_2)(t) \geq 0.$$

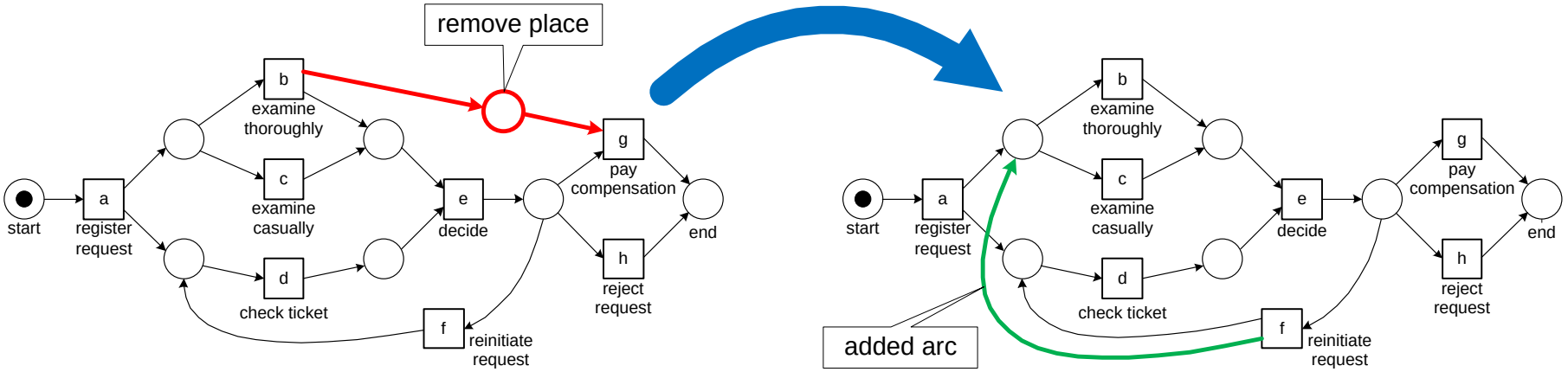
Another Example: Genetic Process Mining



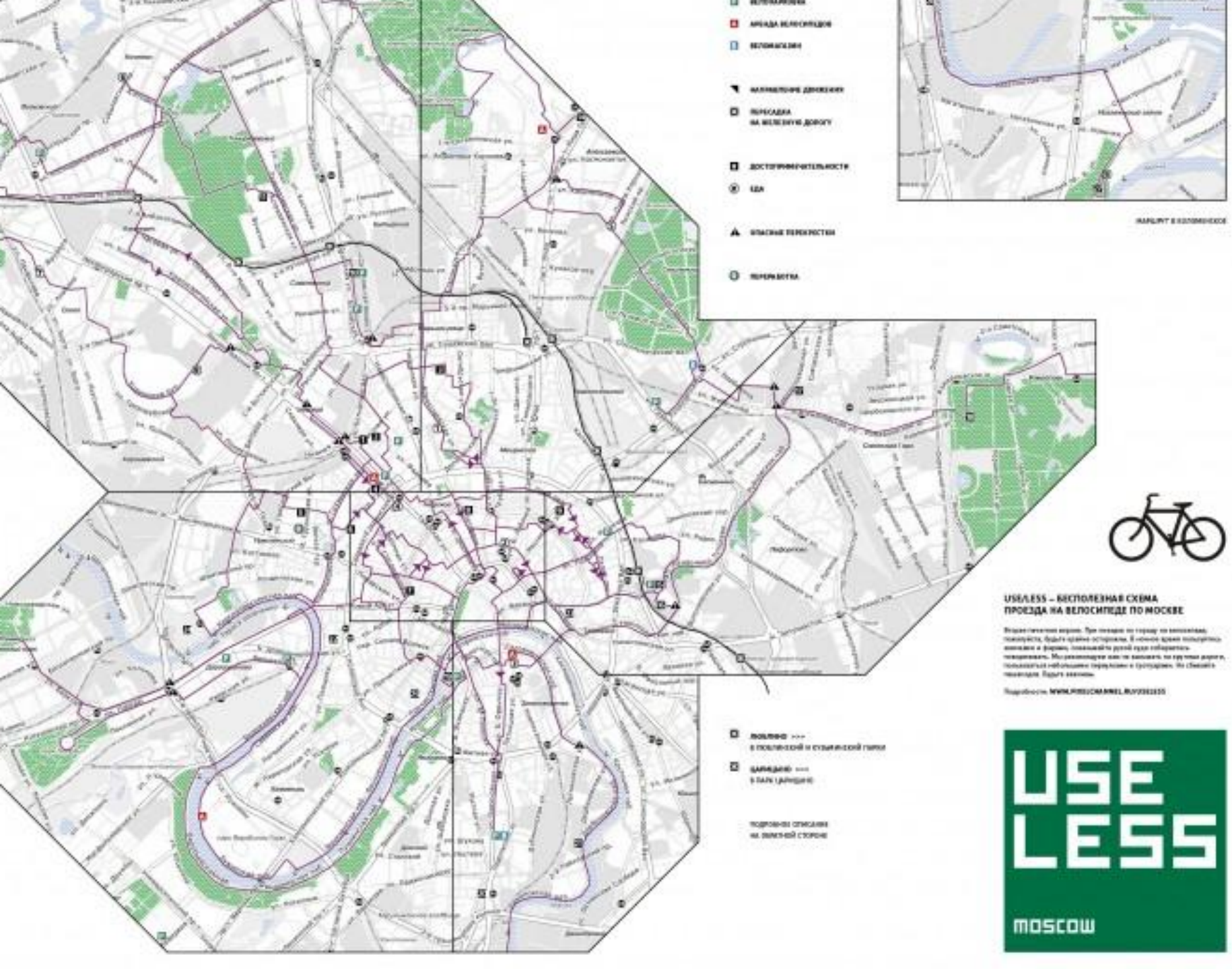
Genetic Operator: Crossover

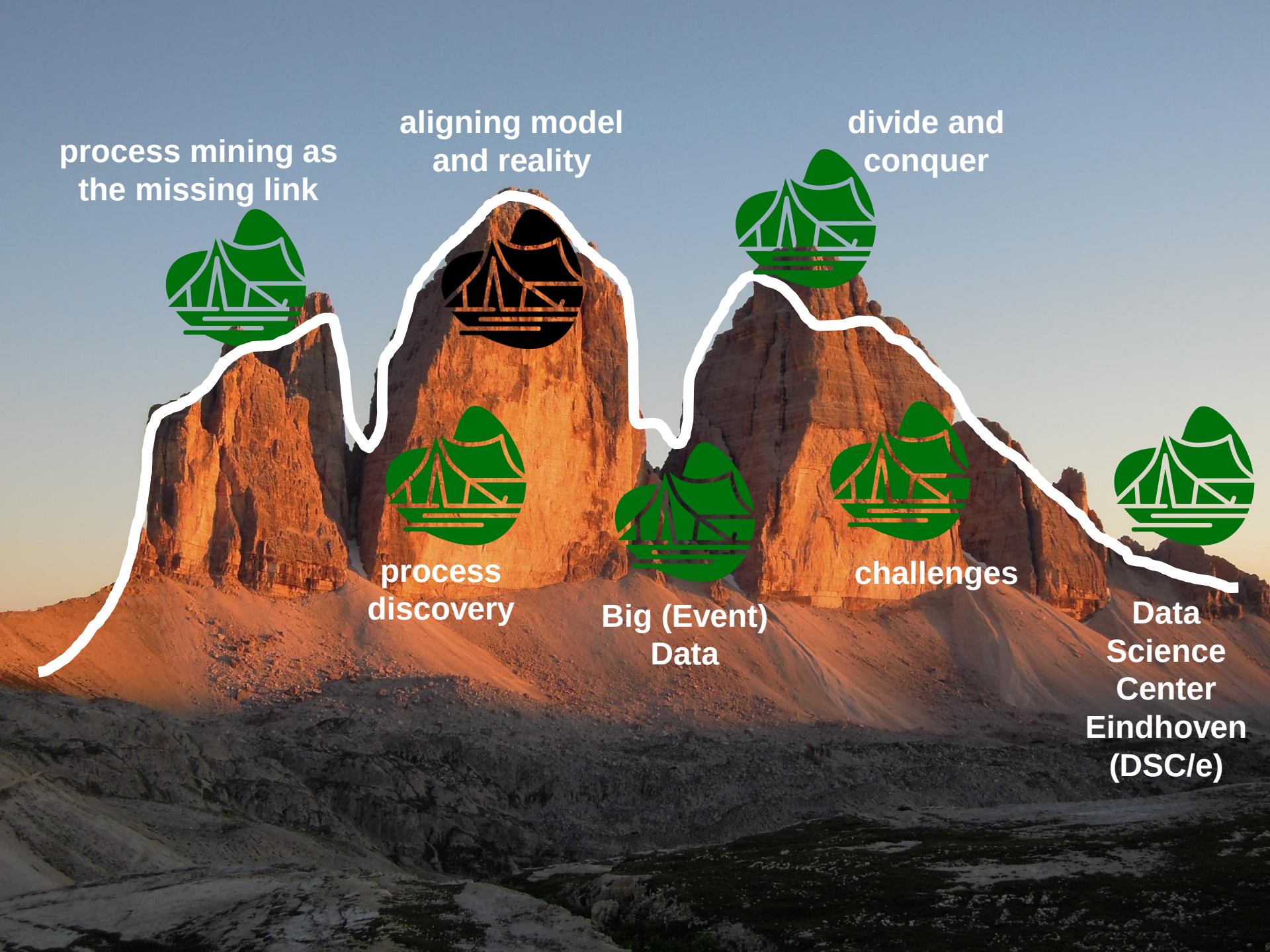


Genetic Operator: Mutation

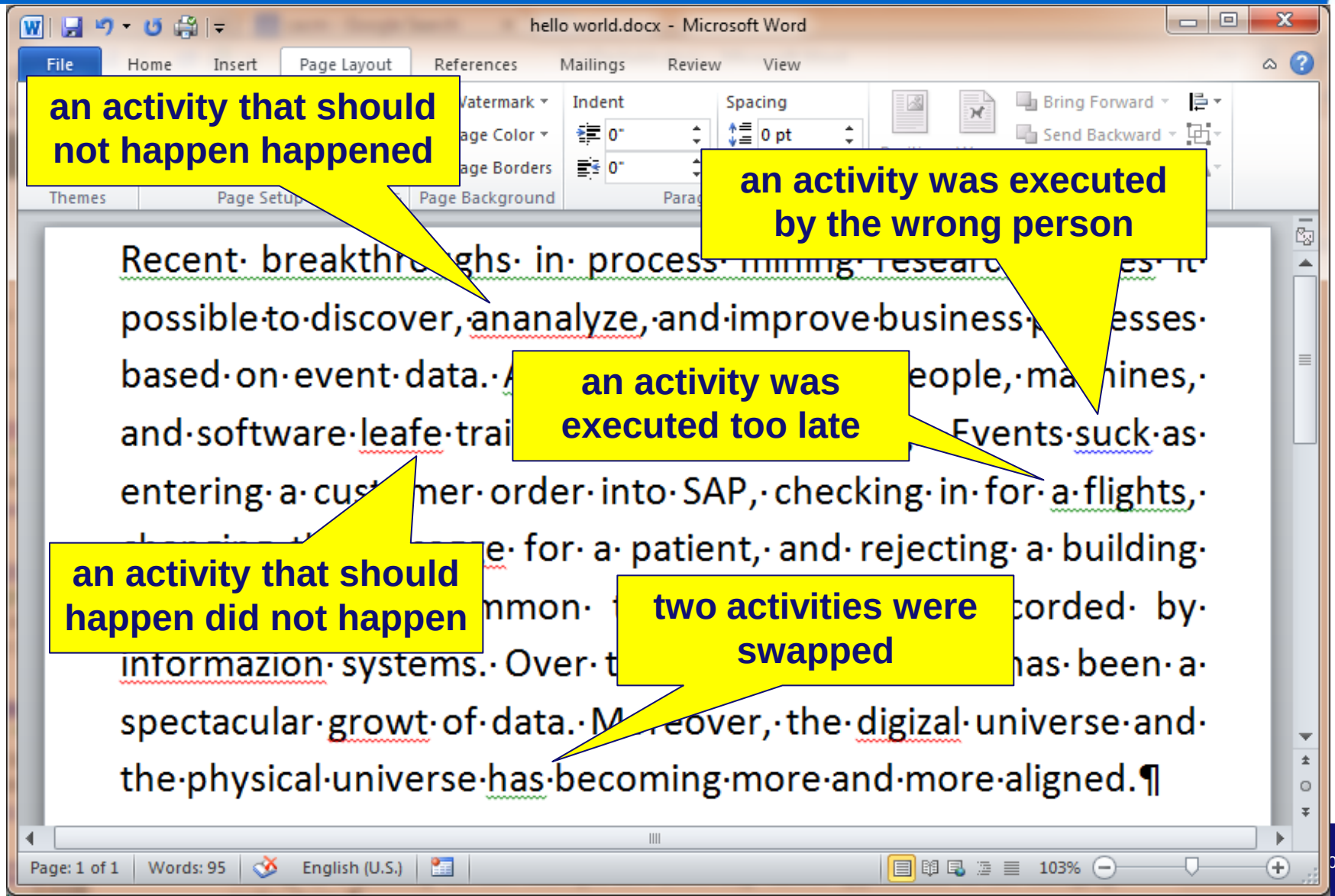



Mine your Map

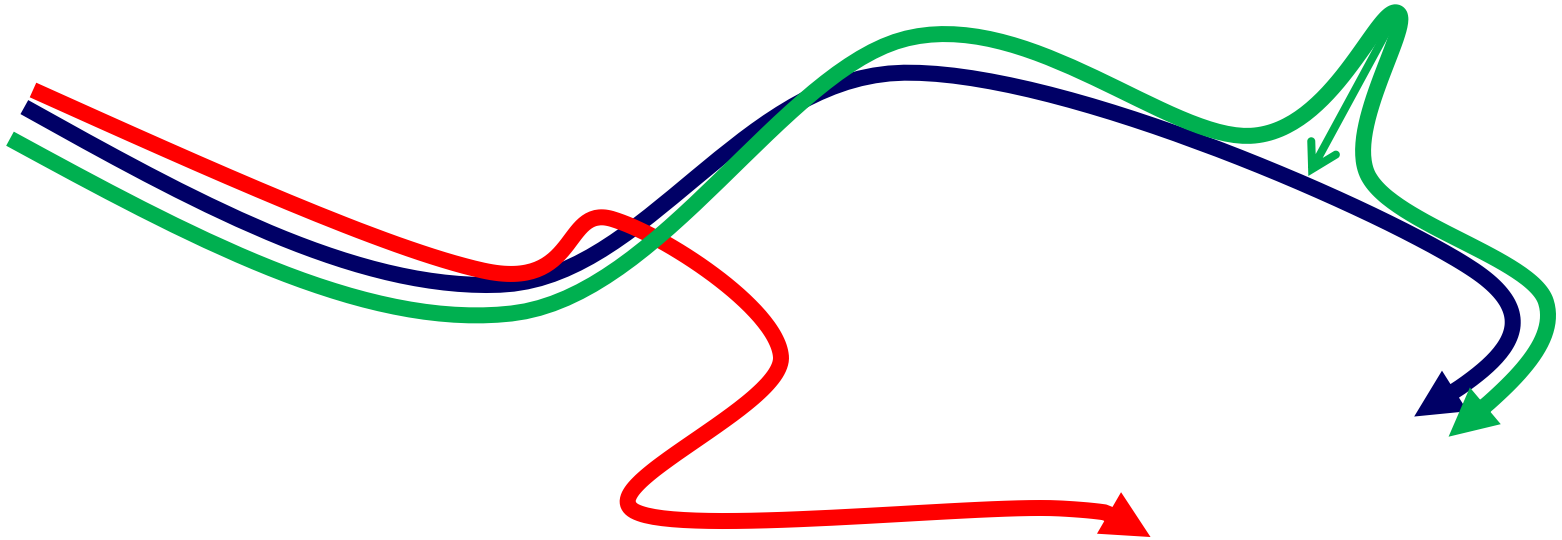

USE
LESS
moscow


process mining as the missing link
aligning model and reality
divide and conquer
process discovery
Big (Event) Data
challenges
Data Science Center Eindhoven (DSC/e)

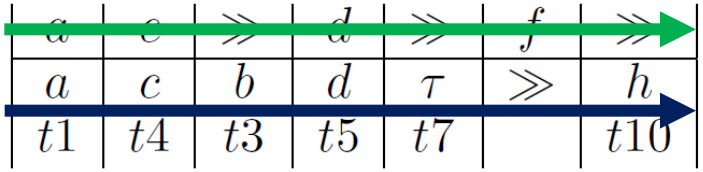
Conformance checking

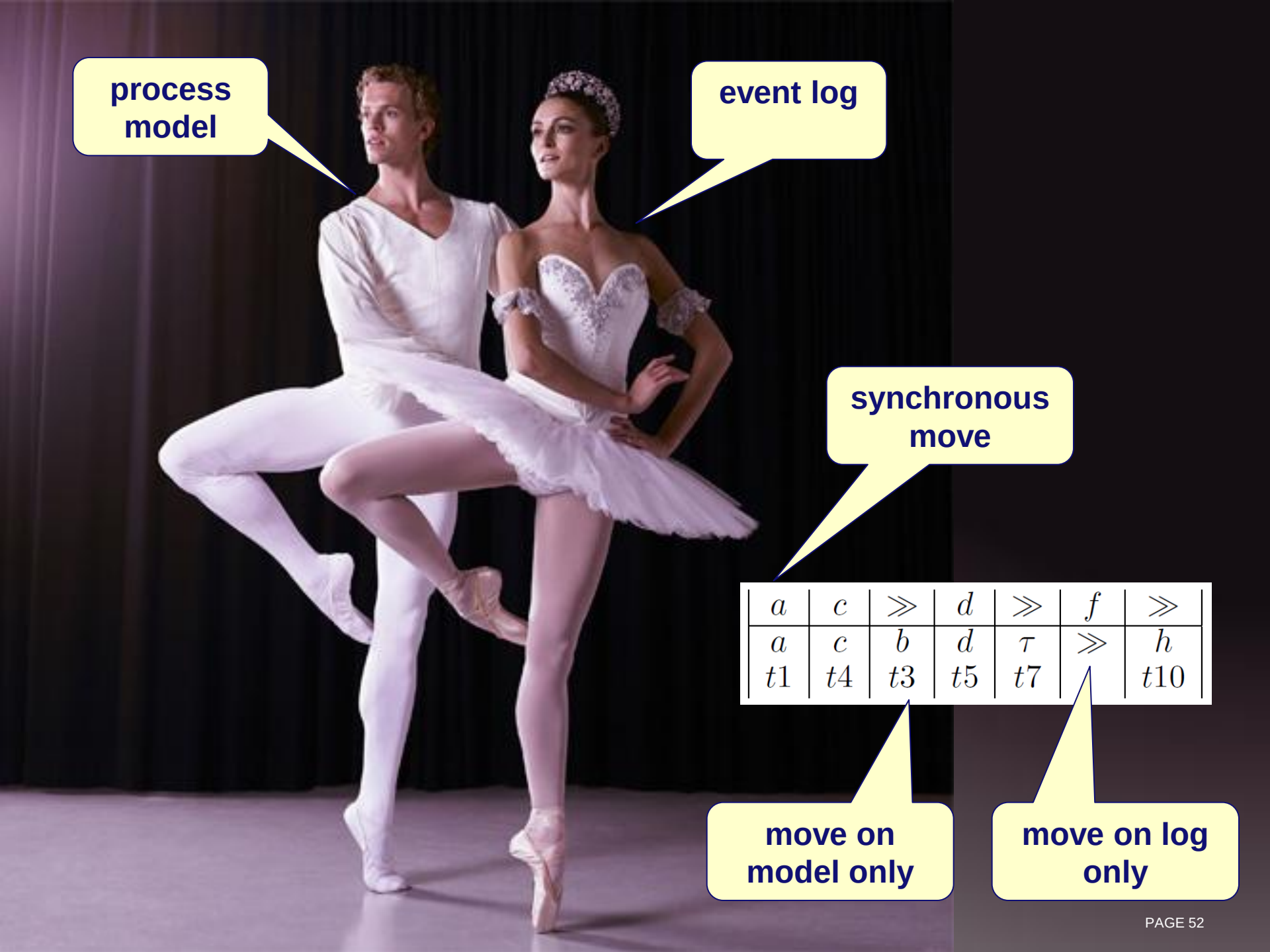


Alignments are essential!



- **conformance checking to diagnose deviations**
- **squeezing reality into the model to do model-based analysis**





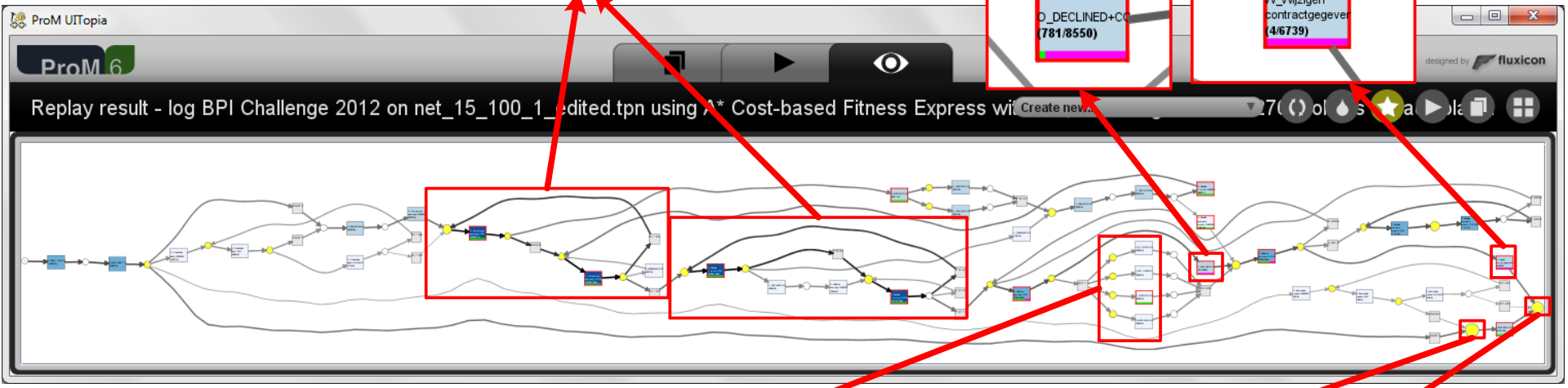
a	c	$\gg$	d	$\gg$	f	$\gg$
a	c	b	d	τ	$\gg$	h
$t1$	$t4$	$t3$	$t5$	$t7$		$t10$

Example: BPI Challenge 2012

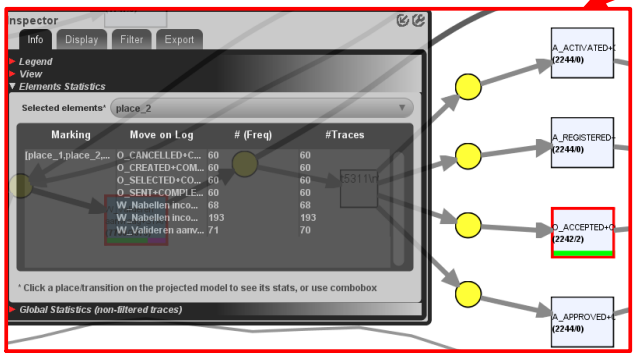
(Dutch financial institute, doi:10.4121/uuid:3926db30-f712-4394-aebc-75976070e91f)

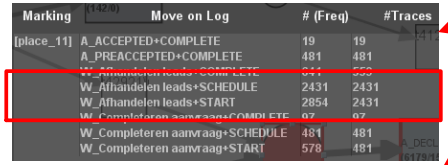
Loops of “W_Completeren aanvraag” and “W_Nabellen offertes” are often performed

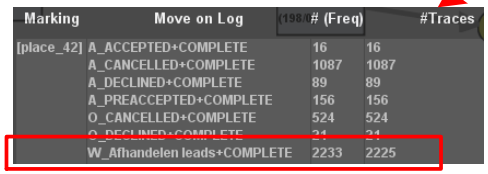
“O_DECLINED” and “W_Wijzigen contractgegevens” are often skipped



Many moves on log of “O_CANCELLED”, ”O_CREATED”, ”O_SELECTED”, “O_SENT” occurred with the same frequency value (i.e. 60) before parallel branch





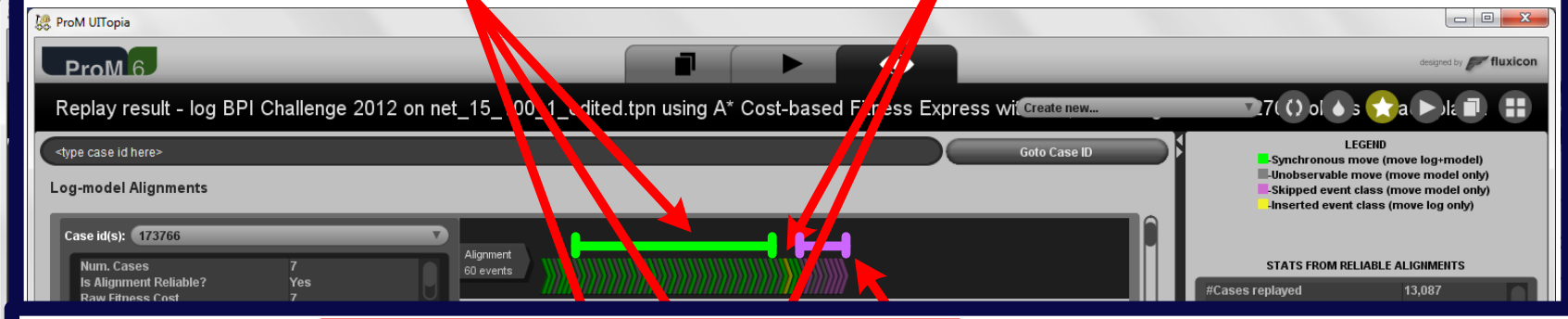


Many moves on log of “W_Afhandelen leads” (> 2200 times) occurred in the end of traces

Work of Arya Adriansyah (Replay project)

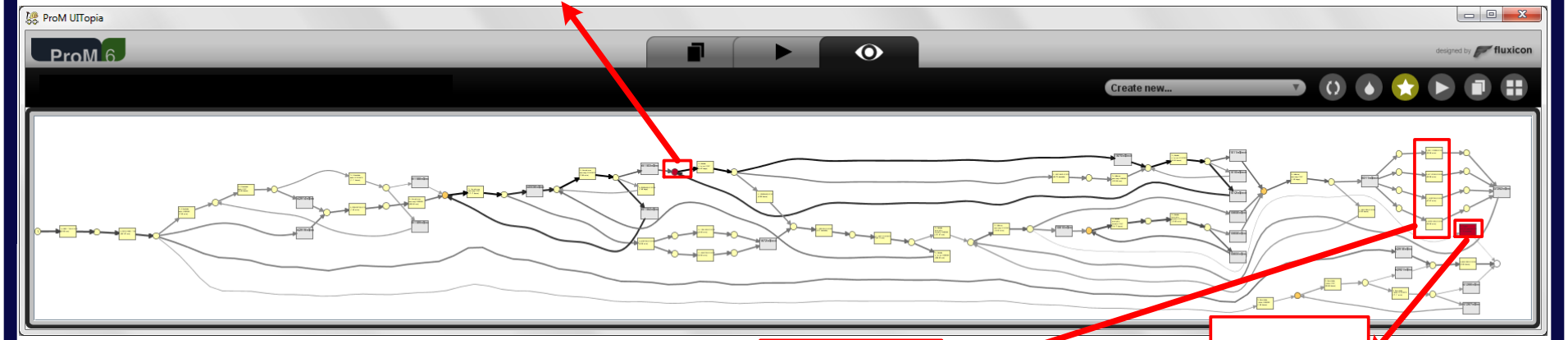
Synchronous moves of “Completeren aanvraag”

Move on log of “Completeren aanvraag”

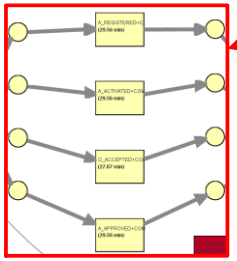


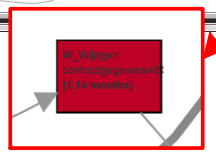
Property	Min.	Max.	Avg.	Std. Dev	Freq.
Waiting time	0.00 ms	29.78 days	2.83 days	3.30 days	24,229
Synchronization time	0.00 ms	0.00 ms	0.00 ms	0.00 ms	24,229
Sojourn time	0.00 ms	29.78 days	2.83 days	3.30 days	24,229

The average waiting time for the input place of “W_Nabellen offertes+START” is very long (2.83 days) compares to the average waiting time of other places



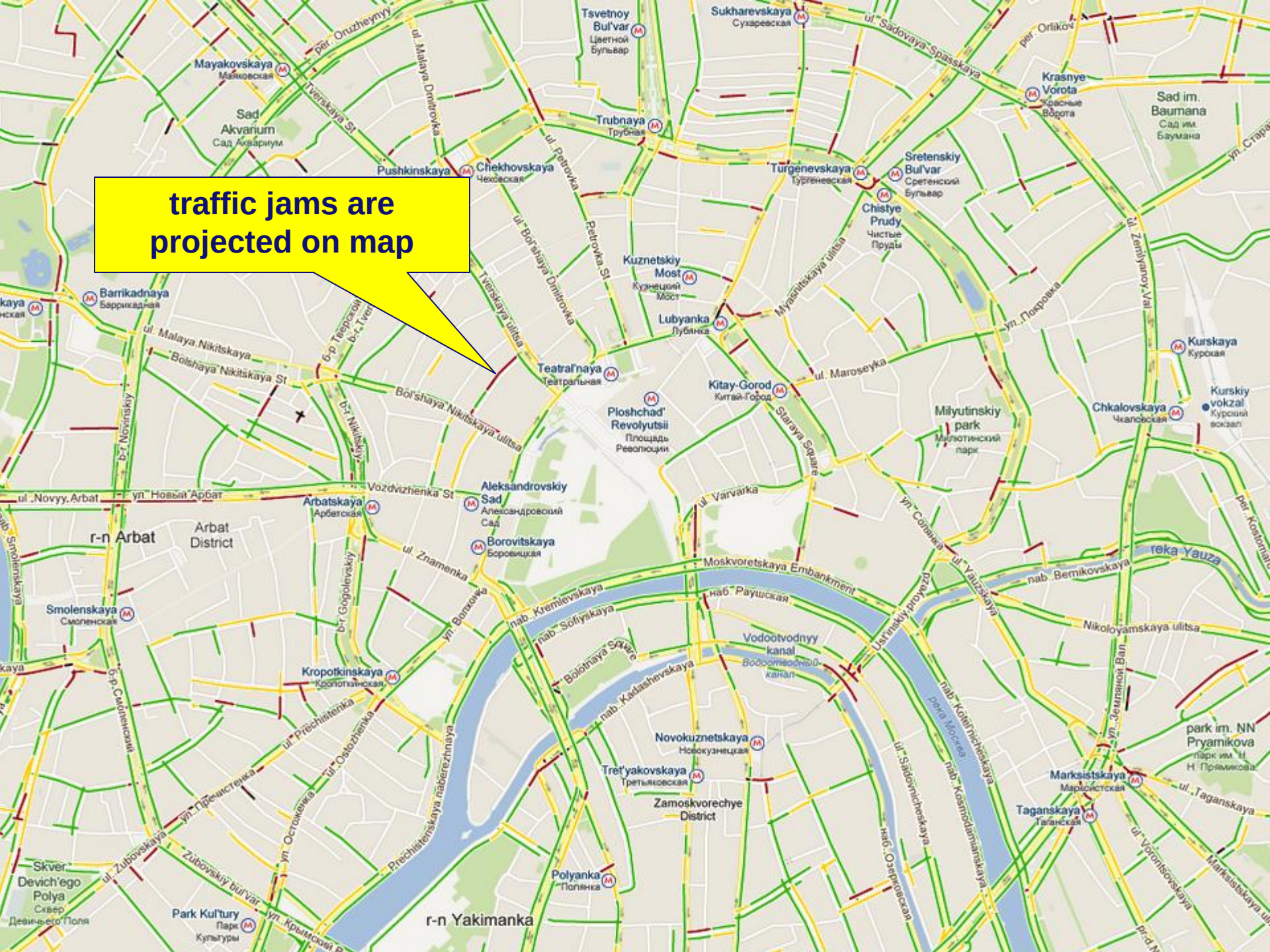
“O_ACCEPTED” has average sojourn time of 27.07 minutes, while “A_REGISTERED”, ”A_ACTIVATED”, and “A_APPROVED” have average sojourn time of 29.56 minutes

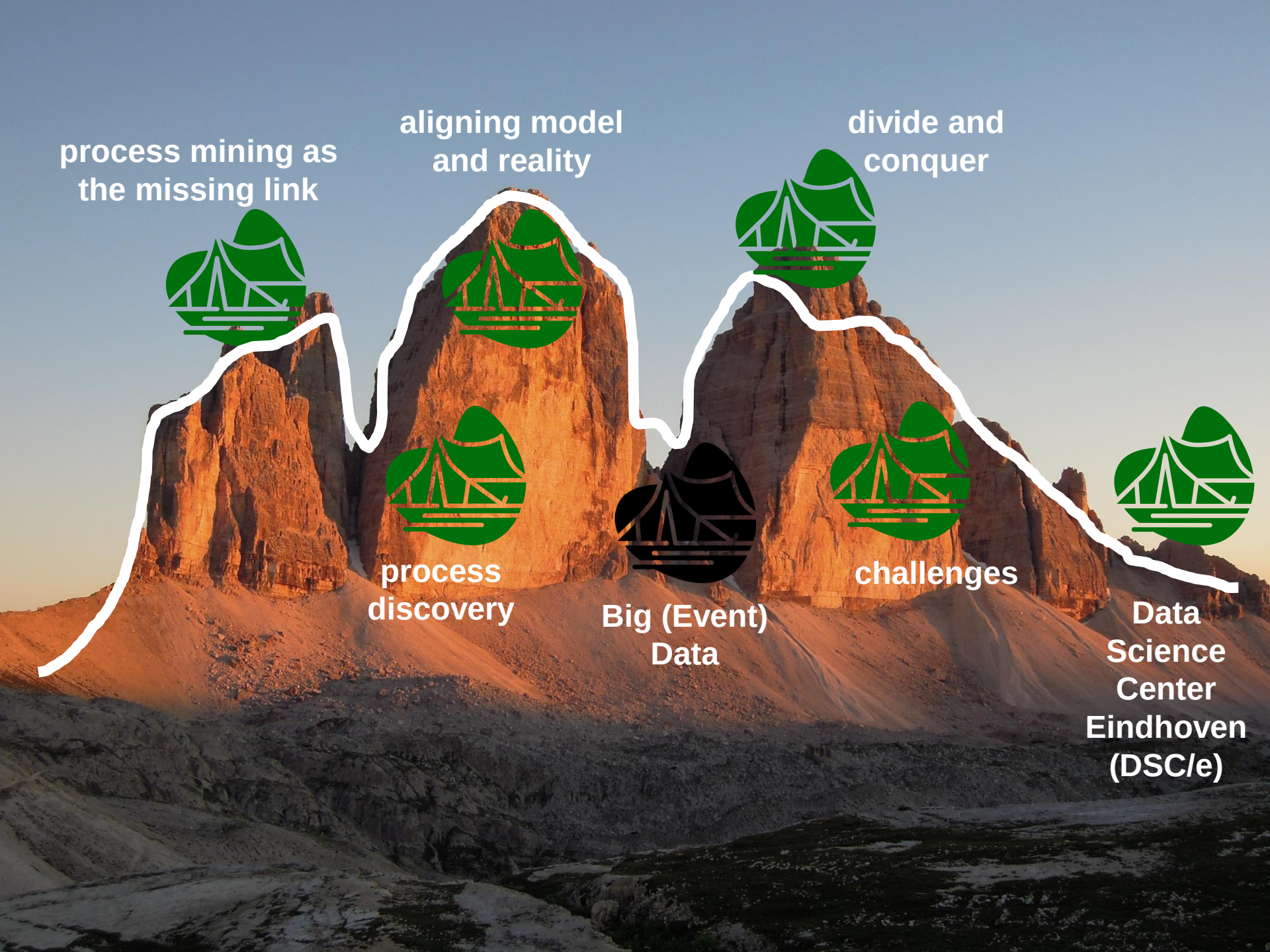




Property	Min.	Max.	Avg.	Std. Dev	Freq.
Throughput time	0.00 ms	0.00 ms	0.00 ms	0.00 ms	4
Waiting time	1.55 hours	3.43 months	1.14 months	1.55 months	4
Sojourn time	1.55 hours	3.43 months	1.14 months	1.55 months	4
#Unique cases ...	4				

Activity “W_Wijzigen contractgegevens” is the bottleneck, but it occured rarely (only 4 times)


traffic jams are projected on map
Tsvetnoy Bul'var
Цветной бульвар
Sukharevskaya
Сухаревская
ul. Sadovaya-Spasskaya
per. Orlikov
Krasnye Vorota
Красные Ворота
Sad im. Baumana
Сад им. Баумана
Mayakovskaya
Маяковская
Sad Akvarium
Сад Аквариум
Tverskaya St
ul. Malaya Dmitrovka
Trubnaya
Трубная
Pushkinskaya
Chekhovskaya
Чеховская
ul. Petrovka
Petrovka St
Turgenevskaya
Тургеневская
Sretenskiy Bul'var
Сретенский бульвар
Chistye Prudy
Чистые Пруды
ul. Bol'shaya Dmitrovka
Tverskaya ulitsa
Kuznetskiy Most
Кузнецкий Мост
Myasnitskaya ulitsa
Barrikadnaya
Баррикадная
ul. Malaya Nikitskaya
Bolshaya Nikitskaya St
b-r Tverskoy
b-r Tver
Lubyanka
Лубянка
ul. Pokrovka
Kurskaya
Курская
Teatral'naya
Театральная
Kitay-Gorod
Китай-город
ul. Maroseyka
Ploshchad' Revolyutsii
Площадь Революции
Milyutinskiy park
Мелютинский парк
Chkalovskaya
Чкаловская
Kurskiy vokzal
Курский вокзал
b-r Novinskiy
b-r Nikitskiy
Bol'shaya Nikitskaya ulitsa
ul. Novyy Arbat
ул. Новый Арбат
Vozdvizhenka St
Aleksandrovskiy Sad
Александровский Сад
Arbatskaya
Арбатская
Staraya Square
ul. Varvarka
r-n Arbat
Arbat District
Borovitskaya
Боровицкая
ul. Znamenka
Moskvoretskaya Embankment
nab. Raushskaya
reka Yauza
nab. Bernikovskaya
Smolenskaya
Смоленская
b-r Gogolevskiy
ul. Volkhonka
nab. Kremlevskaya
nab. Sofiyskaya
Vodootvodnyy kanal
Водоотводный канал
Nikoloyamskaya ulitsa
Kropotkinskaya
Кропоткинская
Bolotnaya Square
nab. Kadashevskaya
Ust'inskiy proyezd
ul. Prechistenka
ul. Ostozhenka
Novokuznetskaya
Новокузнецкая
reka Moskva
nab. Kotel'nicheskaya
park im. NN Pryamikova
Tret'yakovskaya
Третьяковская
Zamoskvorechye District
Marksistskaya
Марксистская
Taganskaya
Таганская
ul. Taganskaya
Prechistenskaya naberezhnaya
ul. Sadovnicheskaya
nab. Kosmodamianskaya
Skver Devich'ego Polya
Сквер Девичьего Поля
ul. Zubovskaya
Zubovskiy bul'var
Polyanka
Полянка
Park Kul'tury
Парк Культуры
r-n Yakimanka


process mining as the missing link
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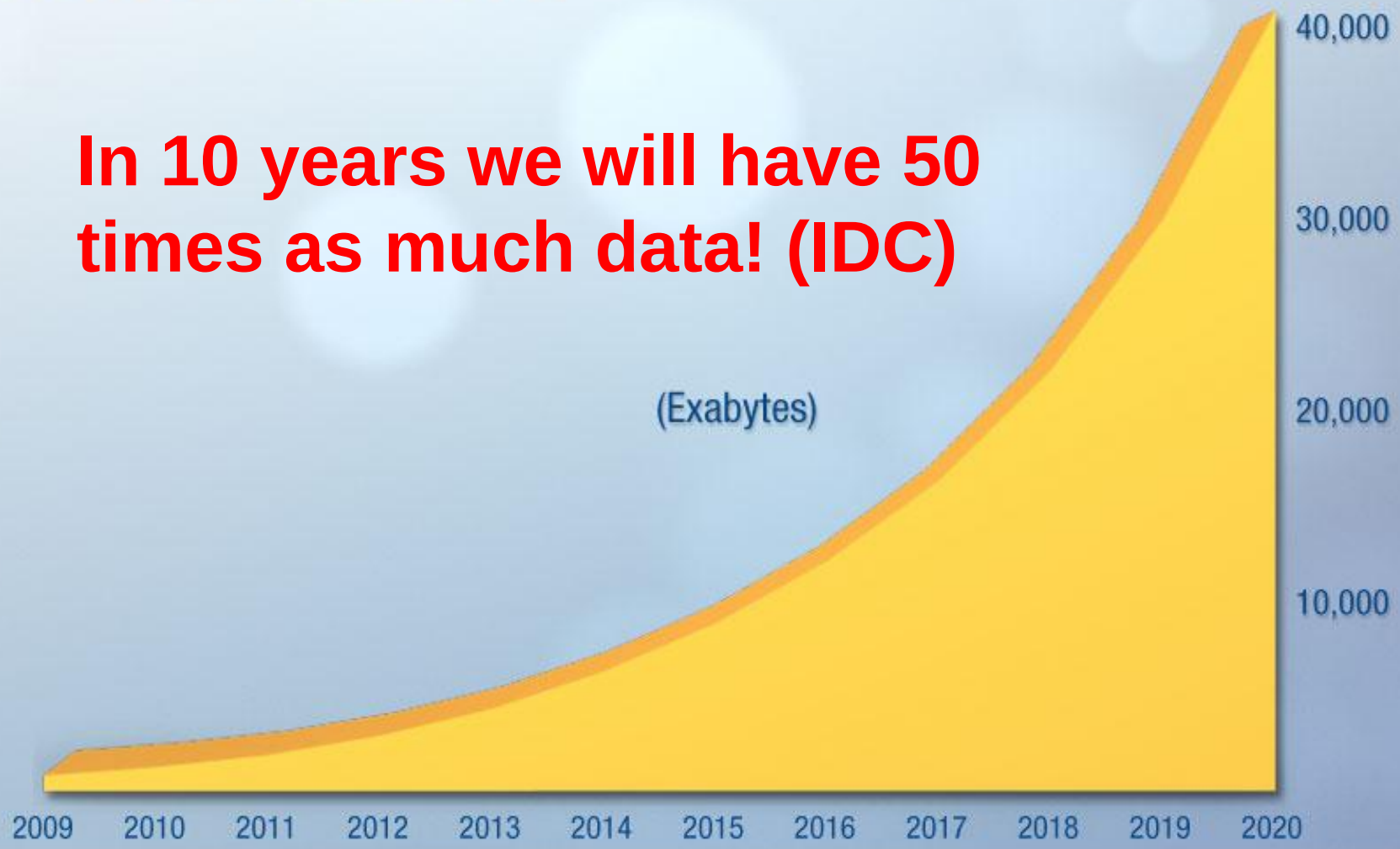
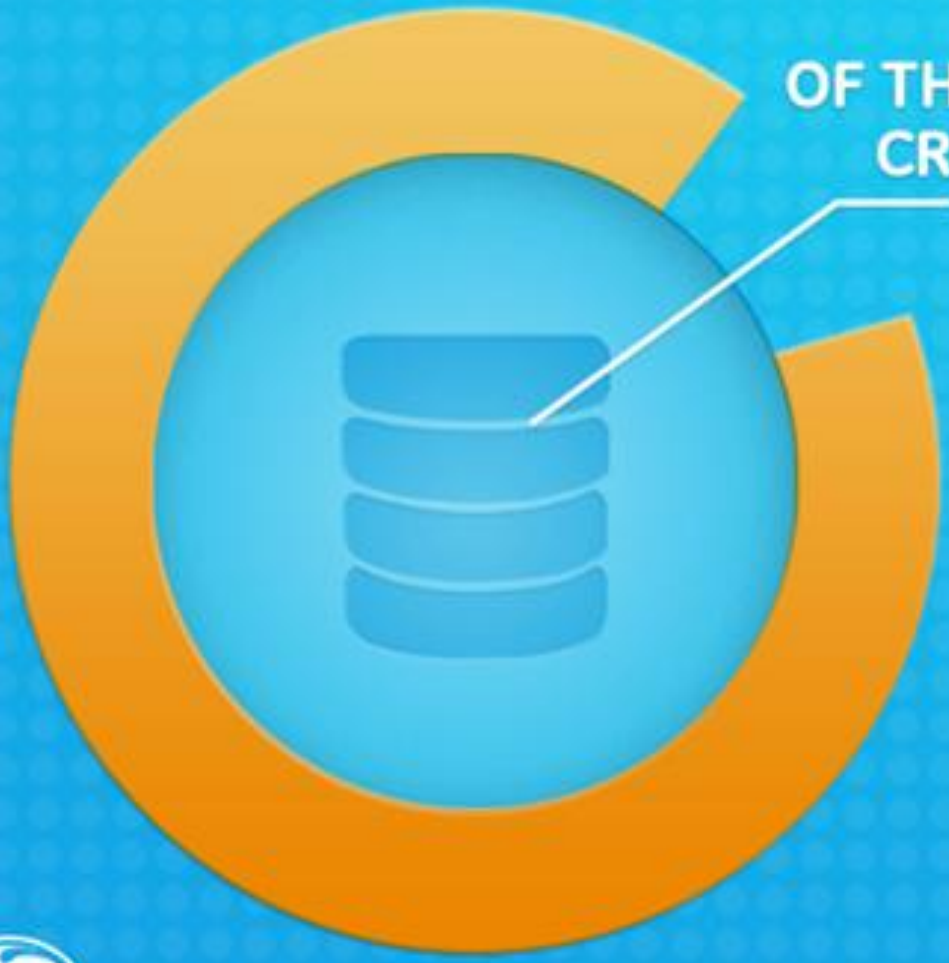
The Digital Universe: 50-fold Growth from the Beginning of 2010 to the End of 2020

In 10 years we will have 50 times as much data! (IDC)



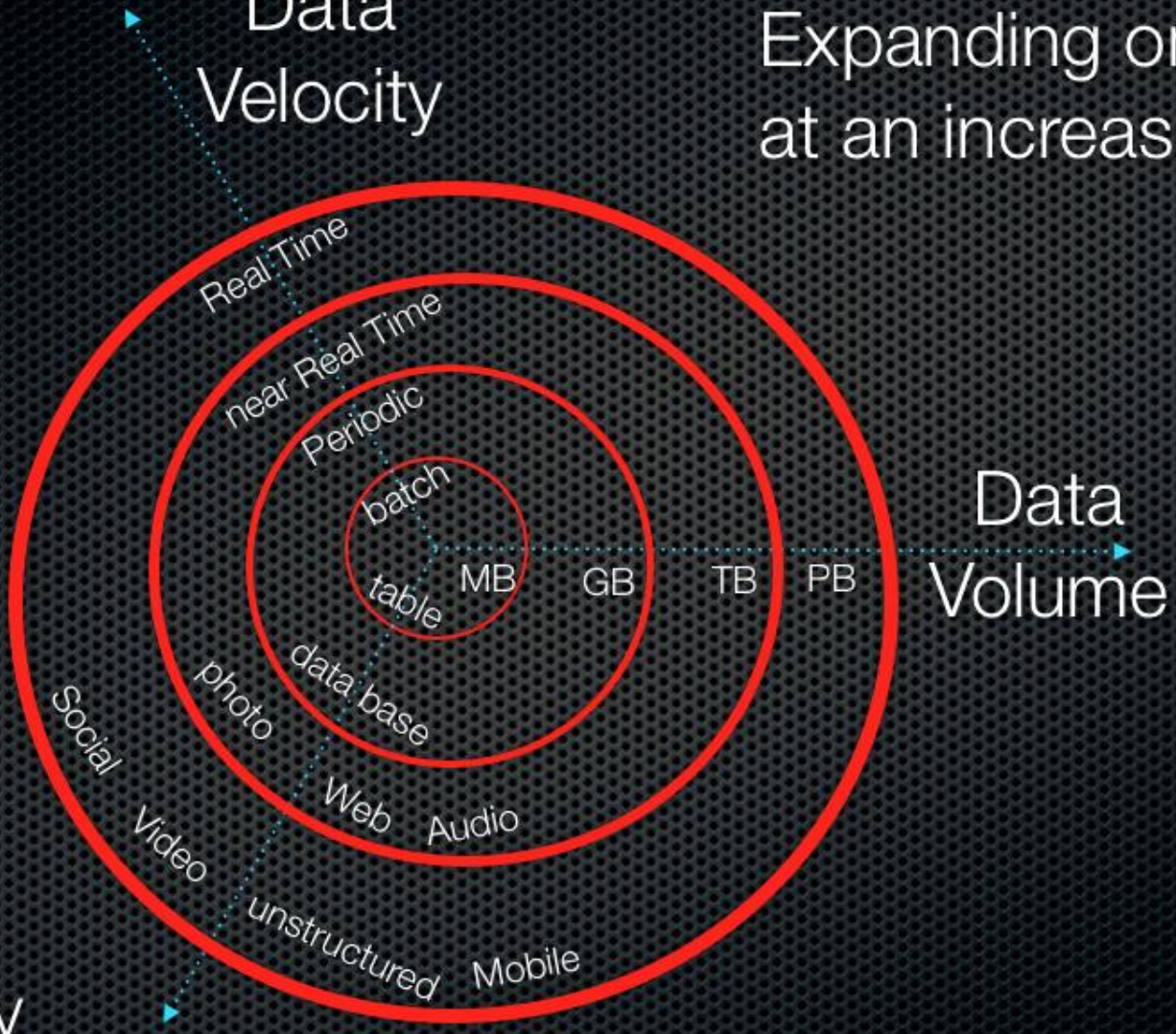
Source: IDC's Digital Universe Study, sponsored by EMC, December 2012



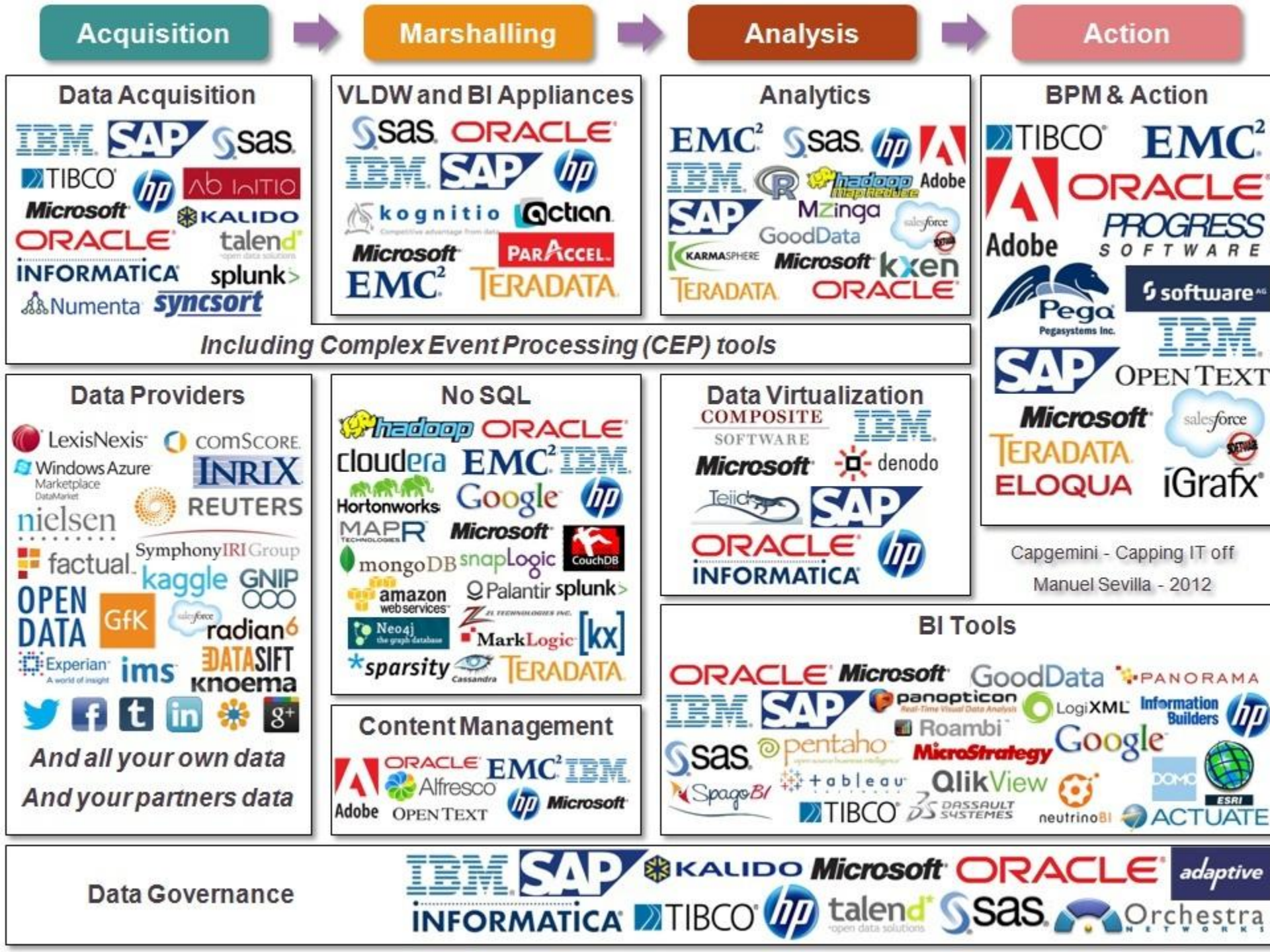
90%

OF THE WORLD'S DATA WAS CREATED IN THE LAST **TWO YEARS**

Big Data: Expanding on 3 fronts at an increasing rate.



http://www.datasciencecentral.com/forum/topics/the-3vs-that-define-big-data


Acquisition
Marshalling
Analysis
Action
Data Acquisition
VLDW and BI Appliances
Analytics
BPM & Action
Including Complex Event Processing (CEP) tools
Data Providers
No SQL
Data Virtualization
Capgemini - Capping IT off
Manuel Sevilla - 2012
BI Tools
Content Management
And all your own data
And your partners data
Data Governance

The Economist

FEBRUARY 27TH–MARCH 5TH 2010 Economist.com

Obama the warrior

Misgoverning Argentina

The economic shift from West to East

Genetically modified crops blossom

The right to eat cats and dogs

The data deluge

AND HOW TO HANDLE IT: A 14-PAGE SPECIAL REPORT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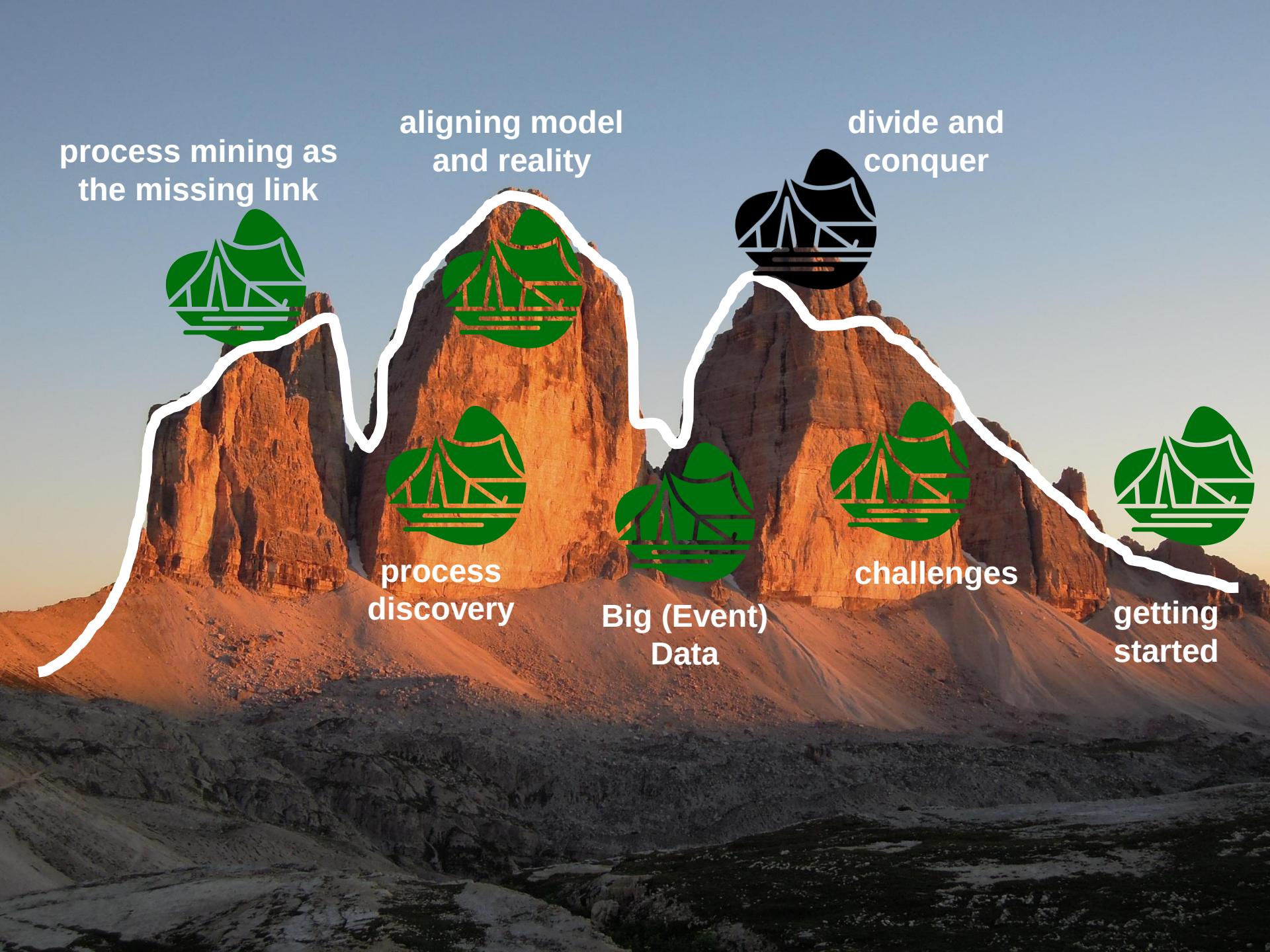
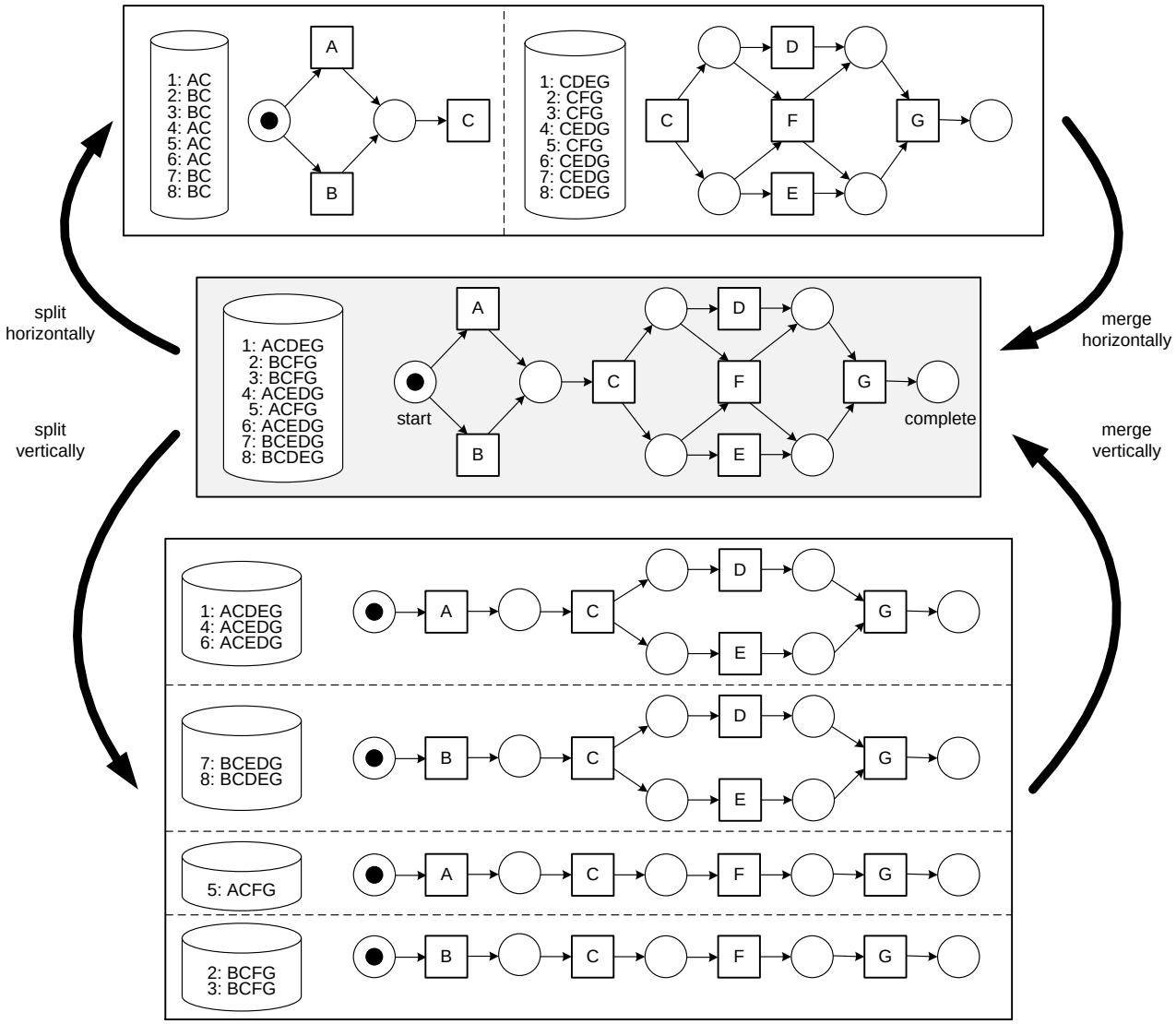
Big Data ?

Big … or fast and efficient?

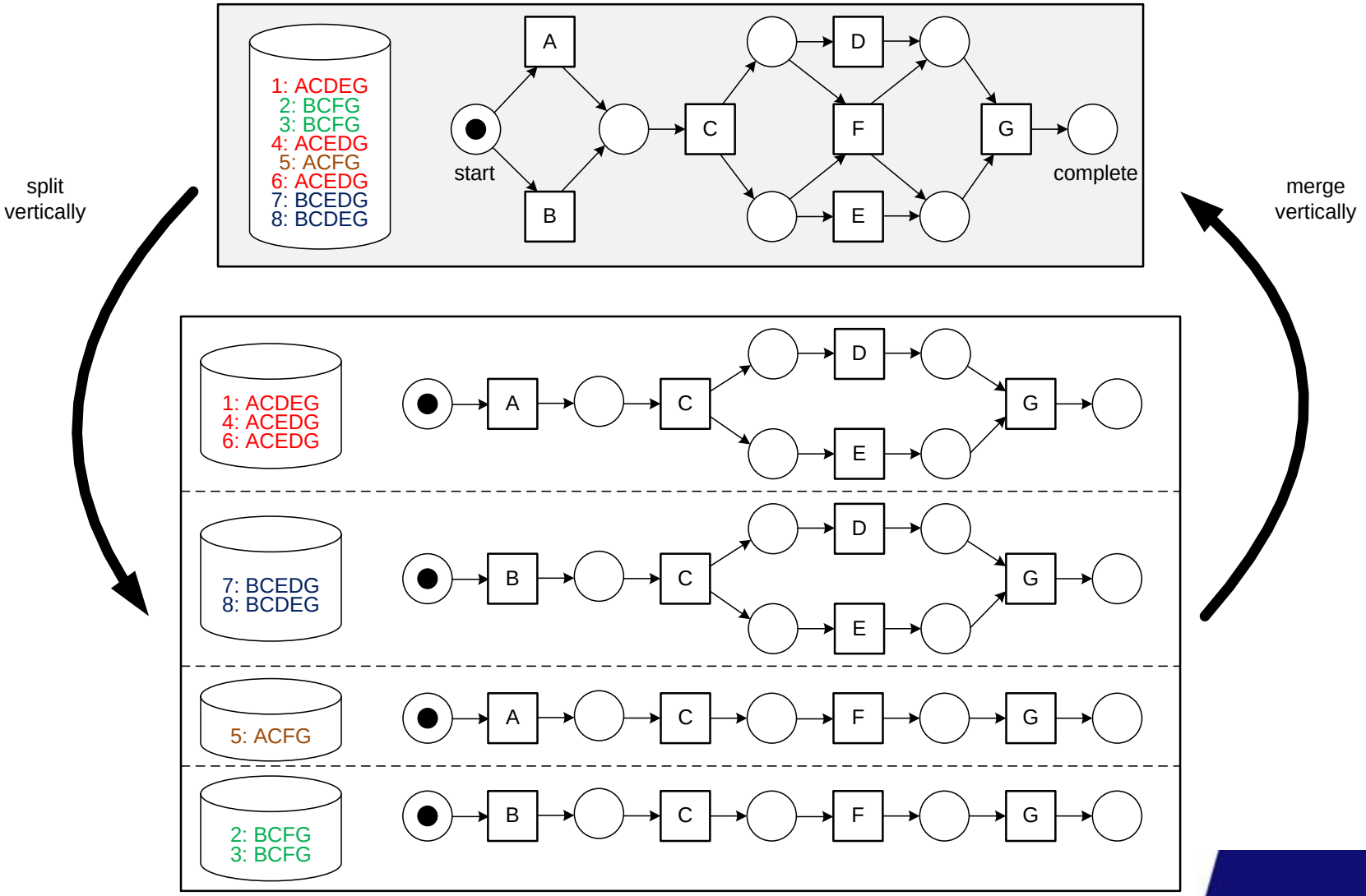

process mining as the missing link
aligning model and reality
divide and conquer
process discovery
Big (Event) Data
challenges
getting started

Big Data: Opportunities and Challenges

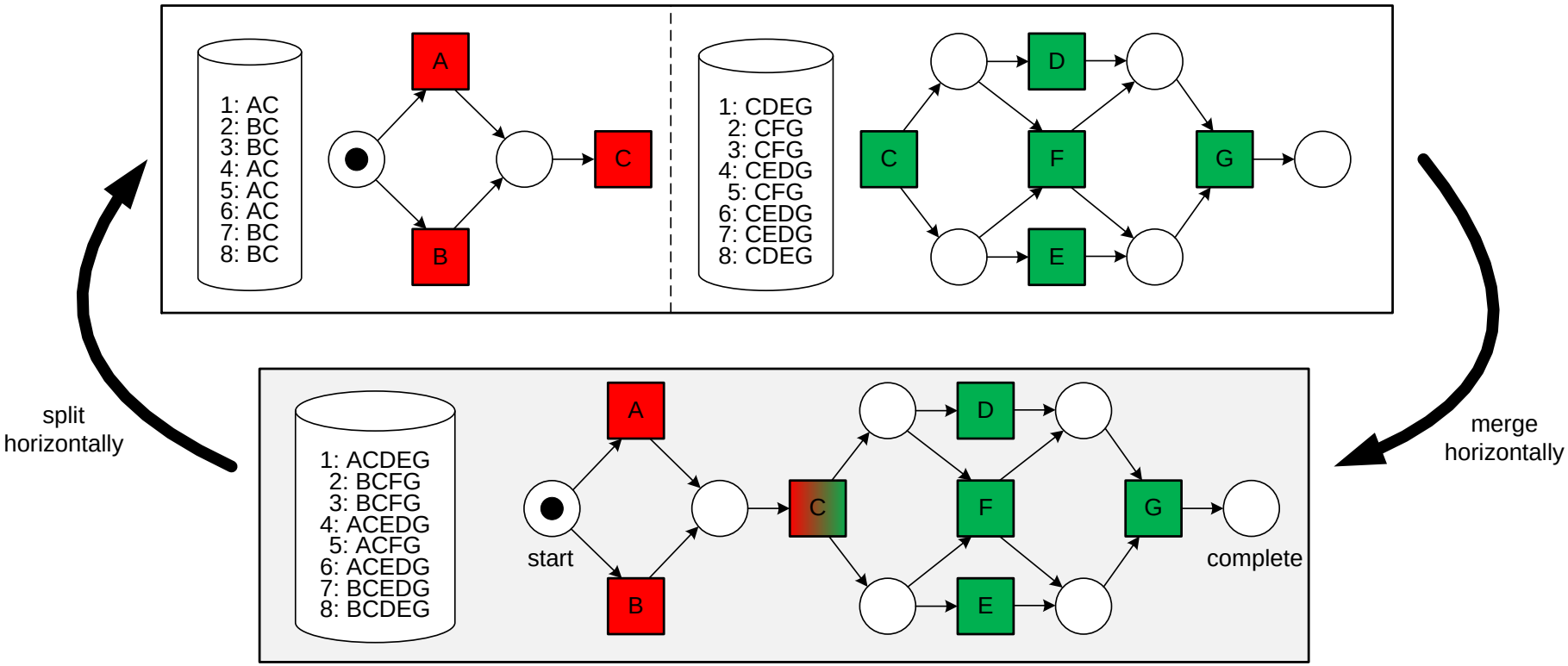
Divide and Conquer



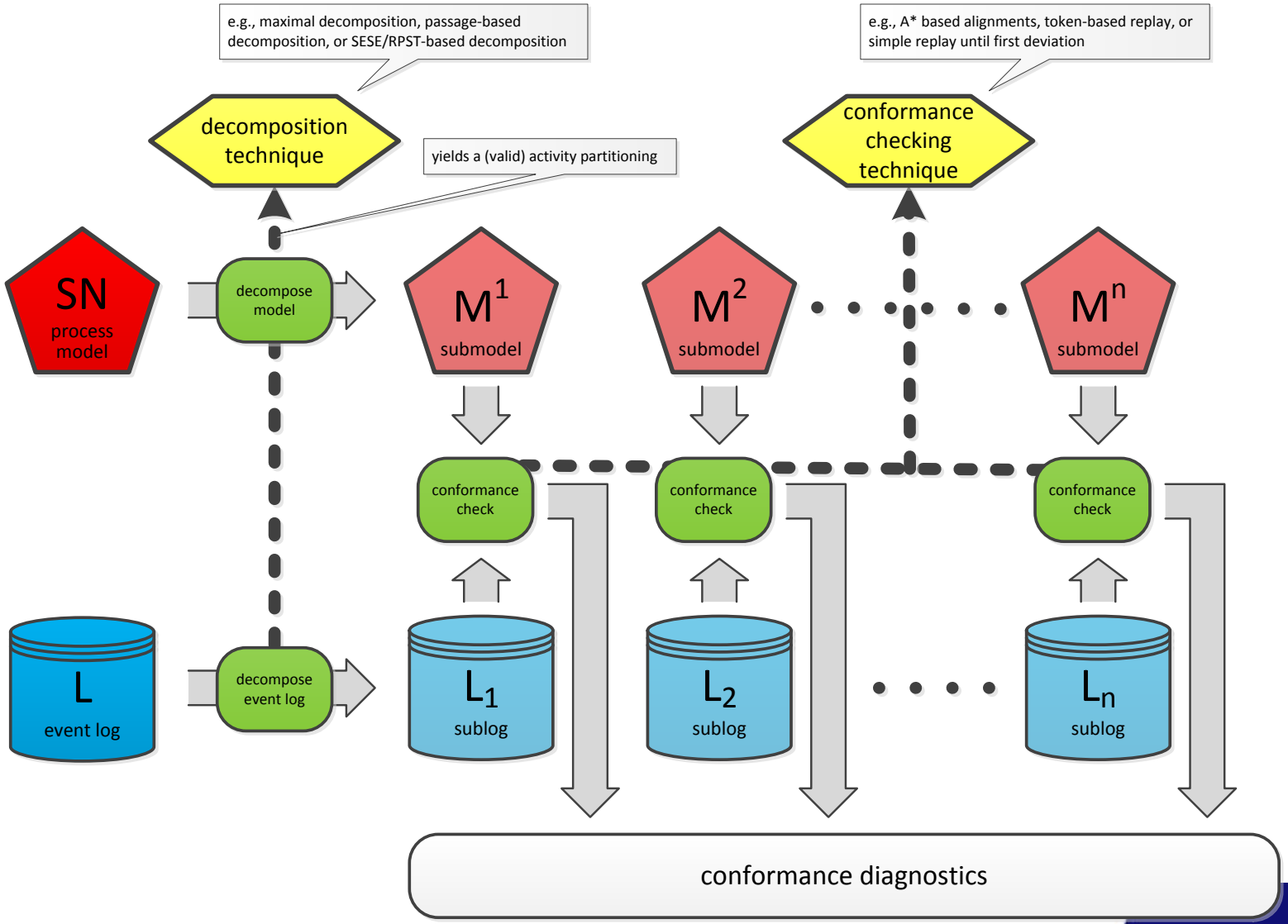
Vertical Decomposition



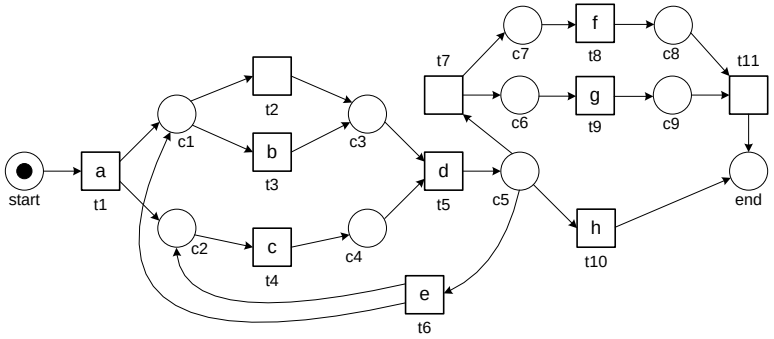
Horizontal Decomposition



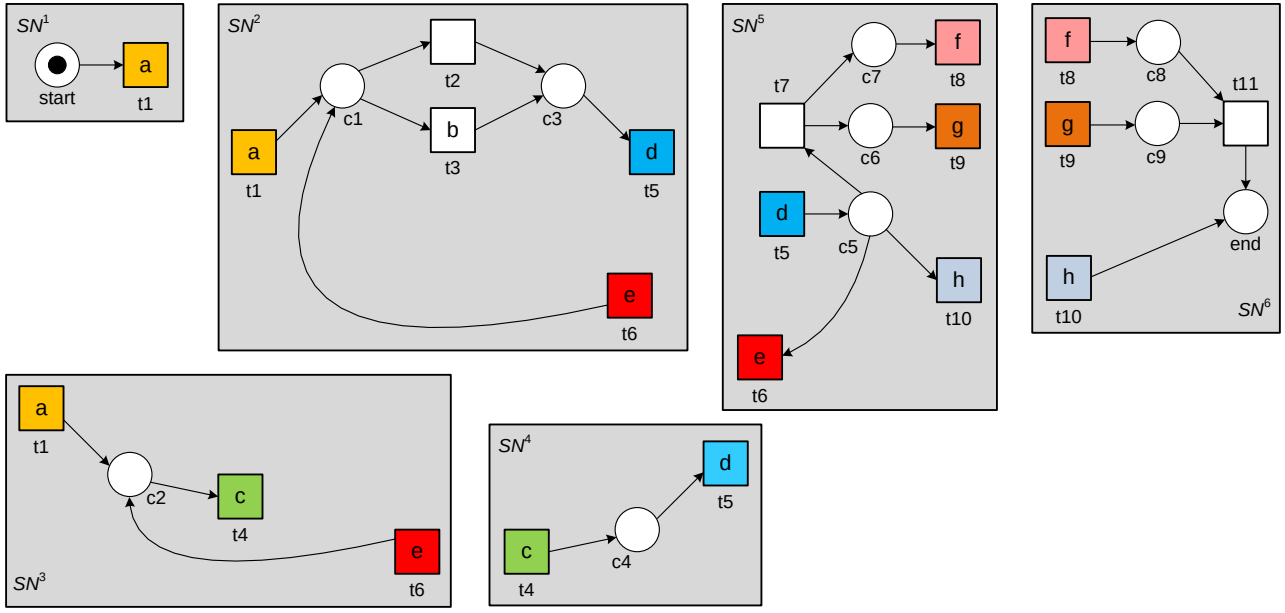
Decomposing Conformance Checking



Example of a valid decomposition

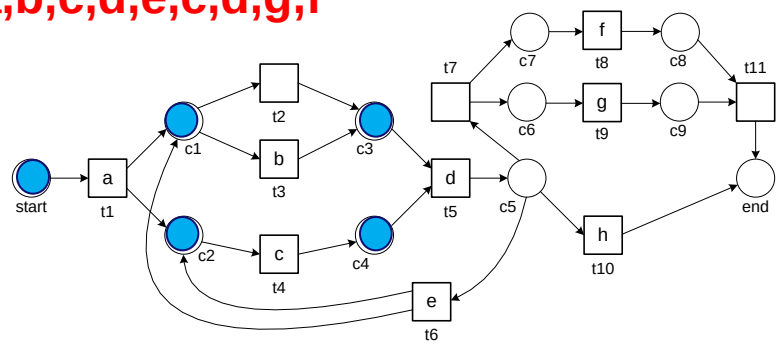


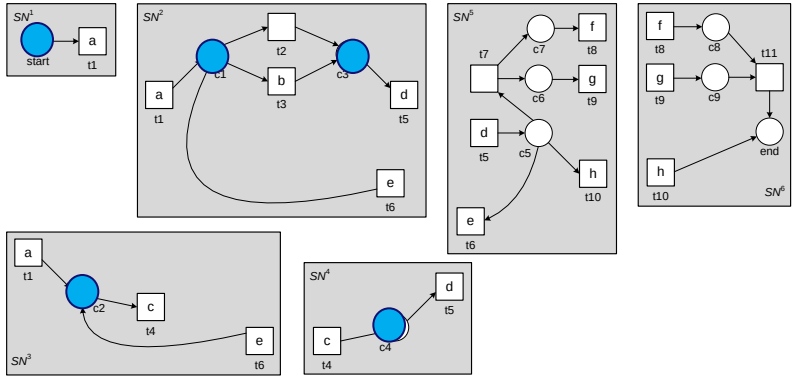
Log can be split in the same way!



Example of alignment for observed trace a,b,c,d,e,c,d,g,f

a,b,c,d,e,c,d,g,f





$$\gamma_3 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|} \hline 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\ \hline a & b & c & d & e & c & \gg & d & \gg & g & f & \gg \\ \hline a & b & c & d & e & c & \tau & d & \tau & g & f & \tau \\ t1 & t3 & t4 & t5 & t6 & t4 & t2 & t5 & t7 & t9 & t8 & t11 \\ \hline \end{array}$$

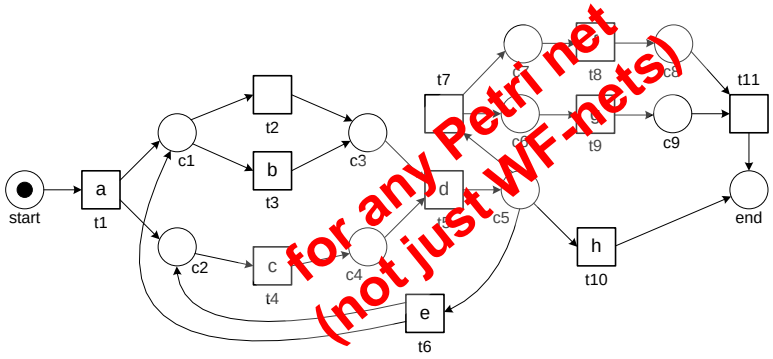
Etc.

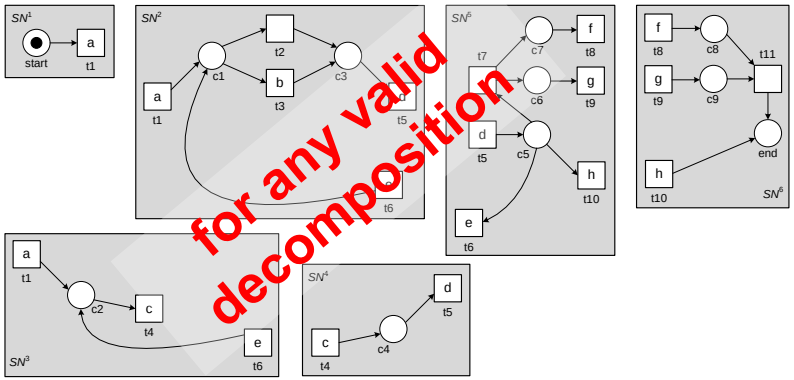
$$\gamma_3^1 = \begin{array}{|c|} \hline 1 \\ \hline a \\ \hline a \\ t1 \\ \hline \end{array} \qquad \gamma_3^2 = \begin{array}{|c|c|c|c|c|c|} \hline 1 & 2 & 4 & 5 & 7 & 8 \\ \hline a & b & d & e & \gg & d \\ \hline a & b & d & e & \tau & d \\ t1 & t3 & t5 & t6 & t2 & t5 \\ \hline \end{array} \qquad \gamma_3^3 = \begin{array}{|c|c|c|c|} \hline 1 & 3 & 5 & 6 \\ \hline a & c & e & c \\ \hline a & c & e & c \\ t1 & t4 & t6 & t4 \\ \hline \end{array}$$

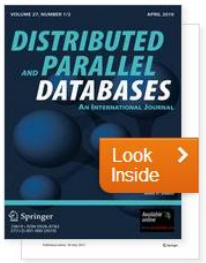
$$\gamma_3^4 = \begin{array}{|c|c|c|c|} \hline 3 & 4 & 6 & 8 \\ \hline c & d & c & d \\ \hline c & d & c & d \\ t4 & t5 & t4 & t5 \\ \hline \end{array} \qquad \gamma_3^5 = \begin{array}{|c|c|c|c|c|c|} \hline 4 & 5 & 8 & 9 & 10 & 11 \\ \hline d & e & d & \gg & g & f \\ \hline d & e & d & \tau & g & f \\ t5 & t6 & t5 & t7 & t9 & t8 \\ \hline \end{array} \qquad \gamma_3^6 = \begin{array}{|c|c|c|} \hline 10 & 11 & 12 \\ \hline g & f & \gg \\ \hline g & f & \tau \\ t9 & t8 & t11 \\ \hline \end{array}$$

Conformance checking can be decomposed !!!

- **General result for any valid decomposition: Any event log or trace is perfectly fitting the overall model if and only if it is also fitting all the individual fragments**

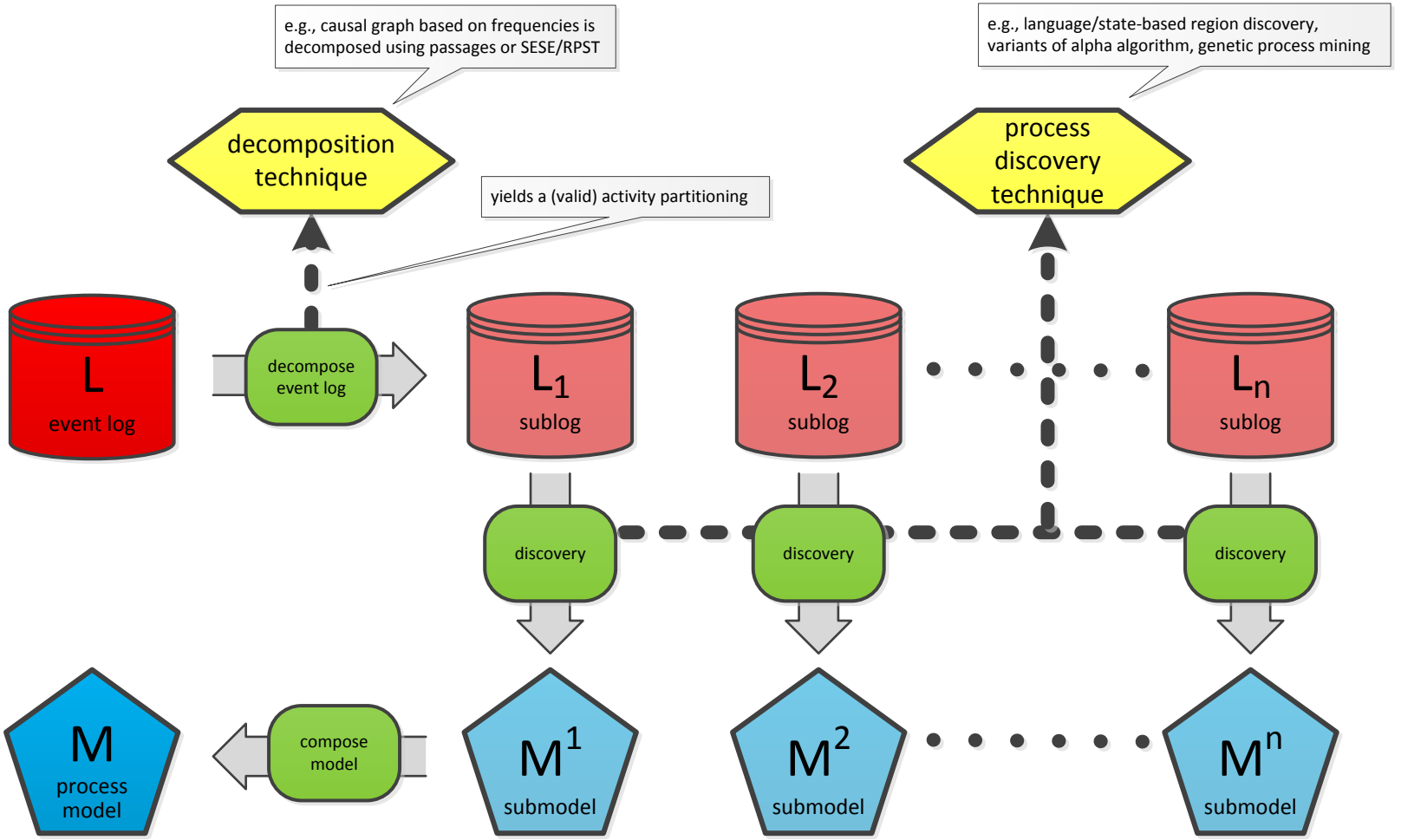






Wil van der Aalst, Decomposing Petri nets for process mining: A generic approach. Distributed and Parallel Databases, Volume 31, Issue 4, pp 471-507, 2013

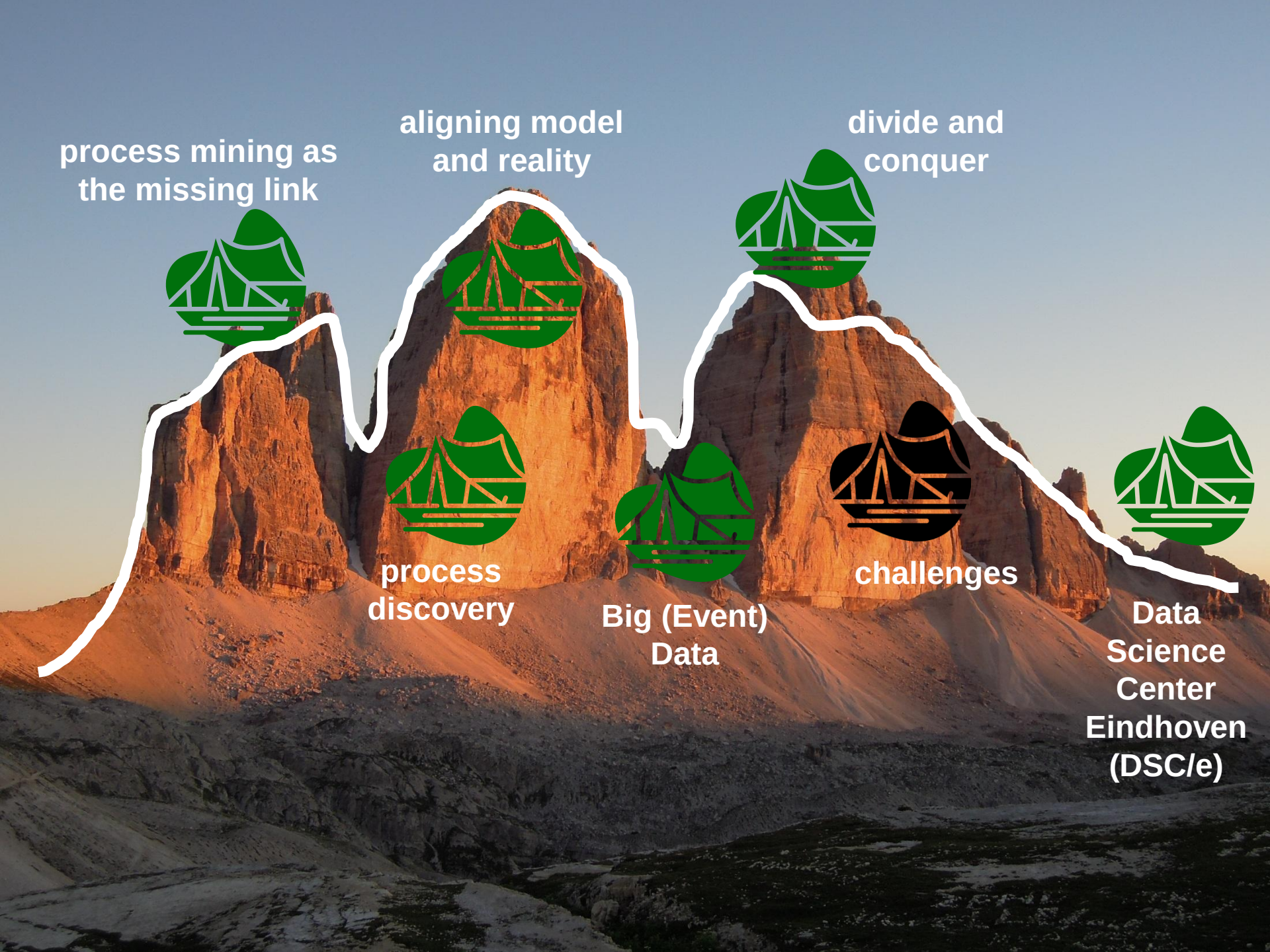
Decomposing Process Discovery



Learn more about decomposing process mining problems?

- **W.M.P. van der Aalst. Decomposing Petri Nets for Process Mining: A Generic Approach. *Distributed and Parallel Databases,* 31(4):471-507, 2013.**

- W.M.P. van der Aalst. A General Divide and Conquer Approach for Process Mining. In M. Ganzha, L. Maciaszek, and M. Paprzycki, editors, *Federated Conference on Computer Science and Information Systems (FedCSIS 2013)*, pages 1-10. IEEE Computer Society, 2013.
- W.M.P. van der Aalst. Decomposing Process Mining Problems Using Passages. In S. Haddad and L. Pomello, editors, *Applications and Theory of Petri Nets 2012*, volume 7347 of *Lecture Notes in Computer Science*, pages 72-91. Springer-Verlag, Berlin, 2012.
- W.M.P. van der Aalst and H.M.W. Verbeek. Process Discovery and Conformance Checking Using Passages. *Fundamenta Informaticae*, 2013 (in print).
- J. Munoz-Gama, J. Carmona, and W.M.P. van der Aalst. Hierarchical Conformance Checking of Process Models Based on Event Logs. In J.M. Colom and J. Desel, editors, *Applications and Theory of Petri Nets 2013*, volume 7927 of *Lecture Notes in Computer Science*, pages 291-310. Springer-Verlag, Berlin, 2013.
- J. Munoz-Gama, J. Carmona, and W.M.P. van der Aalst. Conformance Checking in the Large: Partitioning and Topology. In F. Daniel, J. Wang, and B. Weber, editors, *International Conference on Business Process Management (BPM 2013)*, volume 8094 of *Lecture Notes in Computer Science*, pages 130-145. Springer-Verlag, Berlin, 2013.
- H.M.W. Verbeek and W.M.P. van der Aalst. Decomposing Replay Problems: A Case Study. In D. Moldt and H. Roelke, editors, *Proceedings of the International Workshop on Petri Nets in Software Engineering (PNSE 2013)*, volume 989 of *CEUR Workshop Proceedings*, pages 213-232. CEUR-WS.org, 2013.


process mining as the missing link
aligning model and reality
divide and conquer
process discovery
Big (Event) Data
challenges
Data Science Center Eindhoven (DSC/e)


Distributing process mining problems to cope with big data


streaming
event data
(sensors, RFID, messages, etc.)


process discovery: finding sheep with five or more legs
1
formal (not just a picture)
2
fast (should not take years)
ability to balance all conformance dimensions (fitness, precision, generalization, and simplicity) incl. noise
3
4
sound (result should at least be free of deadlocks, etc.)
5
provide guarantees (not just a best effort)

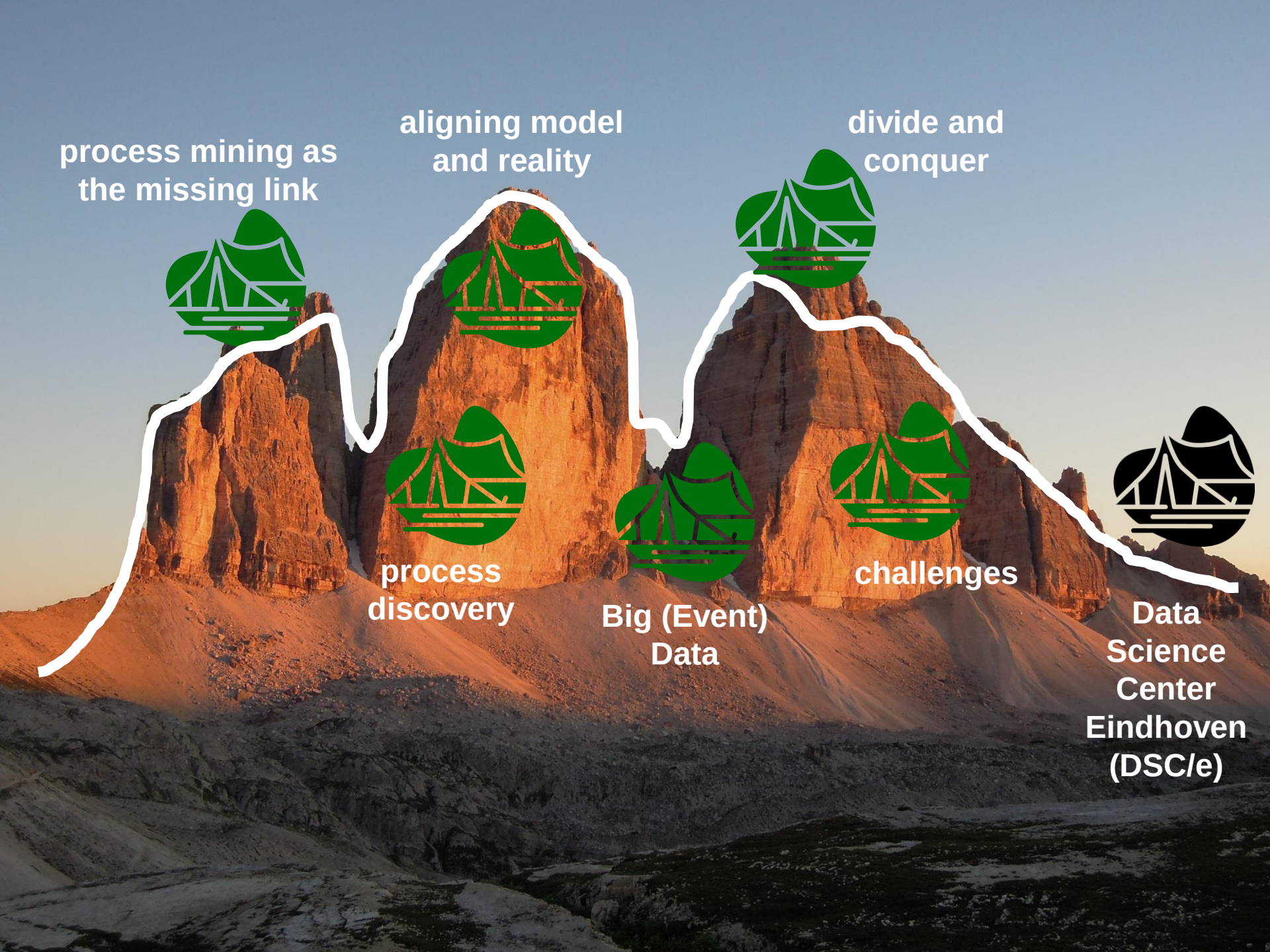
On-the-fly process mining

Operational support


Concept drift


cross-organizational / comparative process mining


Supporting the process of process mining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Launch Symposium:

Turning Data into Value

Auditorium TU/e, Eindhoven
9:00-17:00, December 2nd, 2013

TU/e Technische Universiteit Eindhoven University of Technology

With great pleasure we announce the launch event of the Data Science Center Eindhoven (DSC/e). The DSC/e aims at becoming an internationally leading research and educational facility in the rapidly developing and compelling field of Data Science. The symposium offers an exciting program on Data Science that addresses a variety of relevant topics, including:

- State-of-the art in Data Science (Visual Analytics, Mining, Social Computing, etc.)
- Industrial trends in Data Science
- The scientific program of DSC/e
- Poster presentations demonstrating research results applied in practice

Participation is free of charge, but registration is required.
Please register at http://www.tue.nl/dsce/sympos (limited availability)

Prof. dr. Emile Aarts
Dean of the Department of Mathematics and Computer Science

Prof. dr. Wil van der Aalst
Professor of Information Systems and Scientific Director of DSC/e

Where innovation starts

- **DSC/e strives to become the internationally leading expertise center for data science research and education.**
- **Launch Symposium: December 2nd 2013, Auditorium TU/e.**
- **Exciting program with well-known data science experts from both industry and academia.**
- **Put the date in your agenda!**
- **Register via www.tue.nl/dsce/sympos**

Motivation: Increasing awareness of the value of (Big) Data

- "In God we trust. All others must bring data" (William Edwards Deming, statistician),
- "Data is a precious thing and will last longer than the systems themselves" (Tim Berners-Lee),
- "Statistics are like bikinis. What they reveal is suggestive, but what they conceal is vital" (Aaron Levenstein, statistician),
- "Every 2 days we create as much information as we did up to 2003" (Eric Schmidt, Google CEO, August 4, 2010),
- "The world's data will grow by 50 times in the next 10 years" (IDC),
- "90% of the data in the world today has been created in the last two years alone" (IBM).


THE INTERNET OF
Events
THINGS
www.comsoc.org/blog

social +
cloud +
ubiquity +
mobile +
dynamic +
competitive +
...


DSC/e: Turning data into real value

Founding Fathers DSC/e

Emile Aarts
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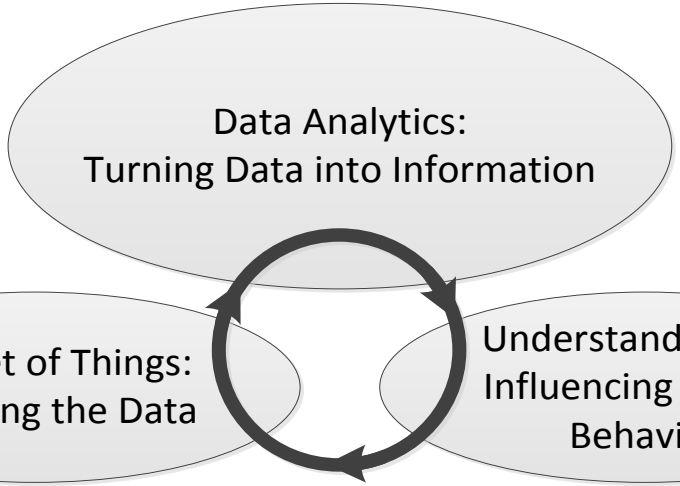
Wil van der Aalst
vdaalst.com

Johan van Leeuwaarden
www.win.tue.nl/~jleeuwaa/

Jack van Wijk
www.win.tue.nl/~vanwijk/



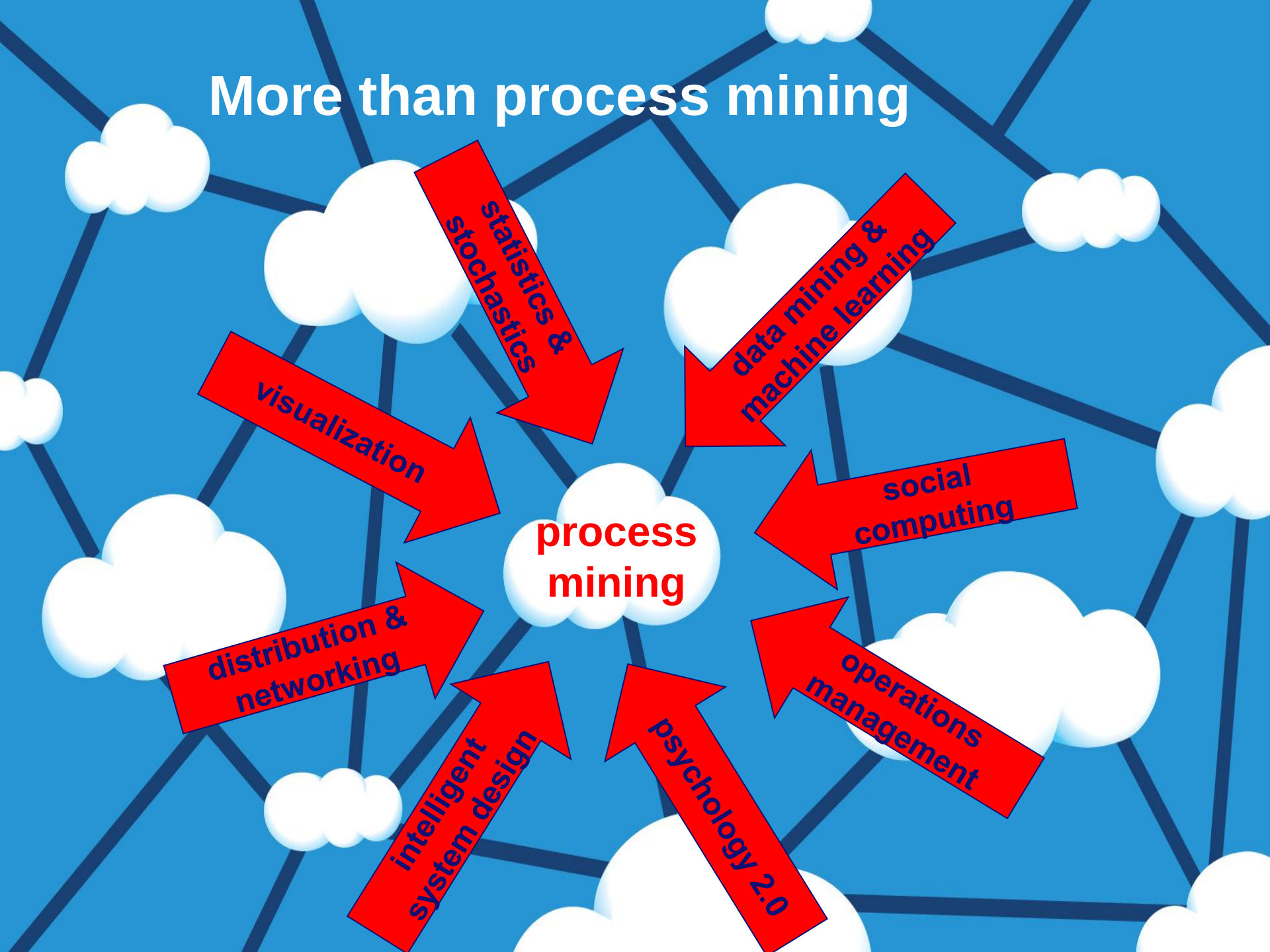
Ton Koonen
www.tue.nl/en/employee/ep/e/d/ep-uid/19730264/

Wijnand IJsselsteijn
www.ijsselsteijn.nl

Matthias Rauterberg
www.idemployee.id.tue.nl/g.w.m.rauterberg/

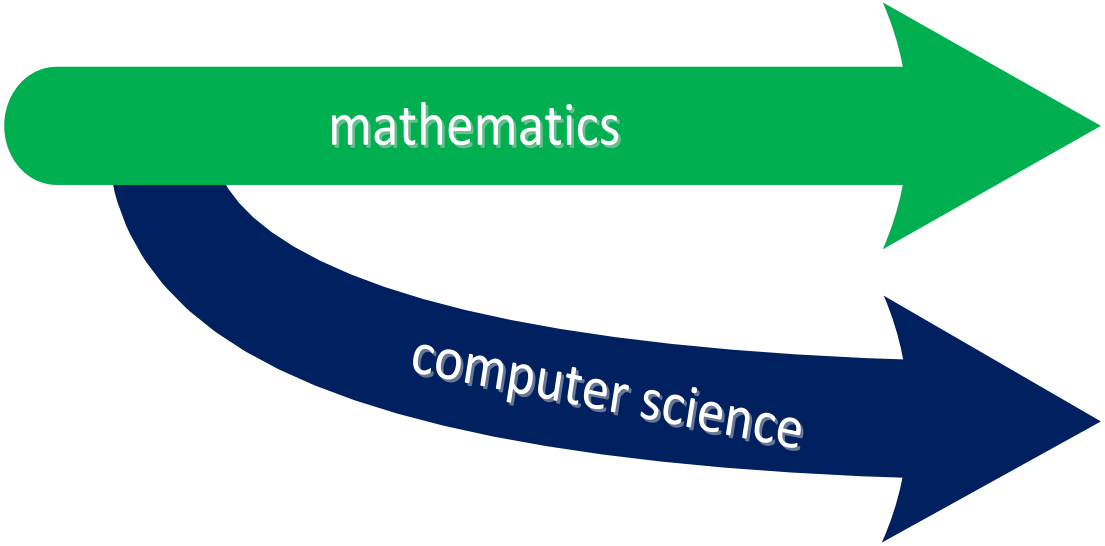
Fred Langerak
http://home.ieis.tue.nl/flangera/

More than process mining

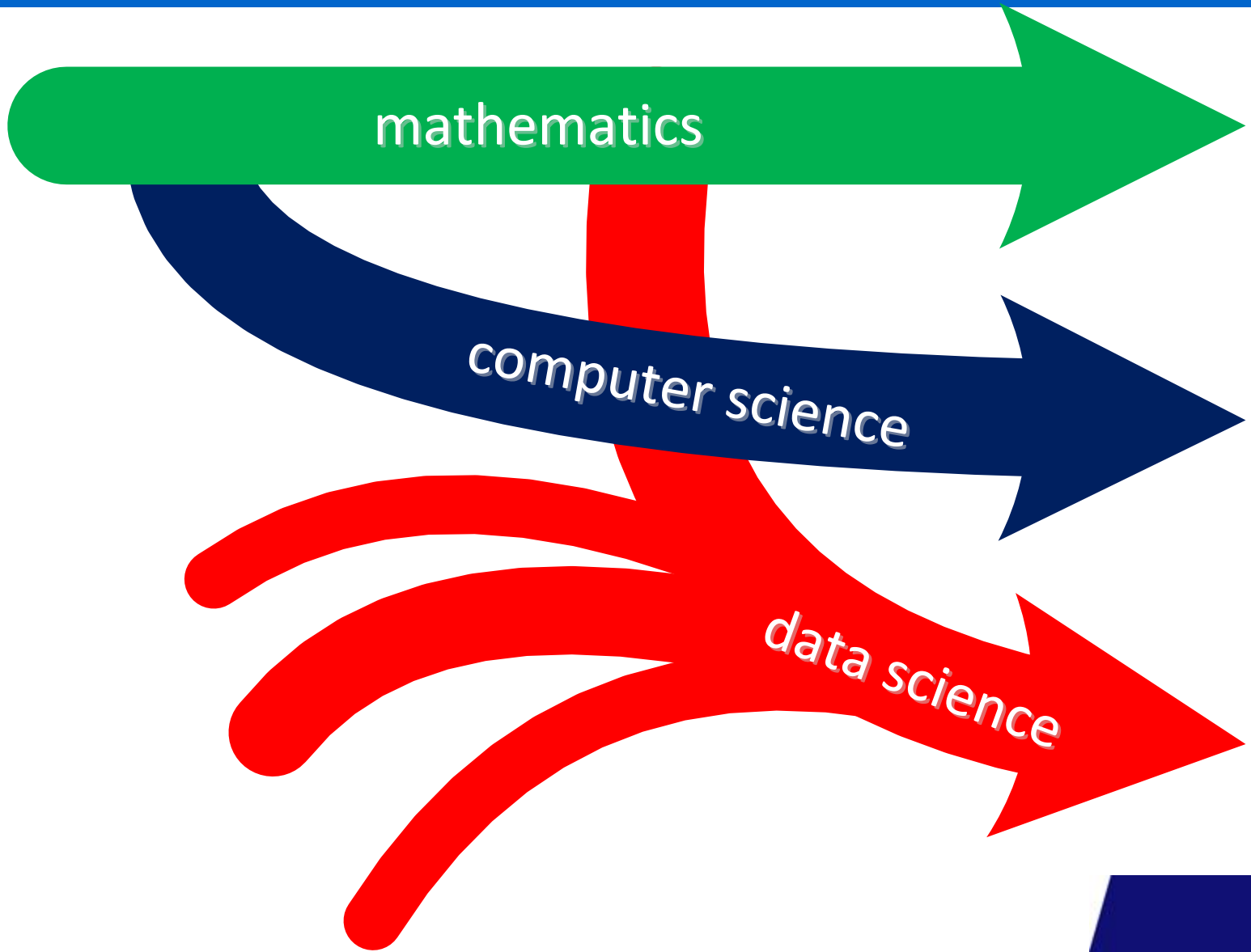


A new discipline …

A new discipline …



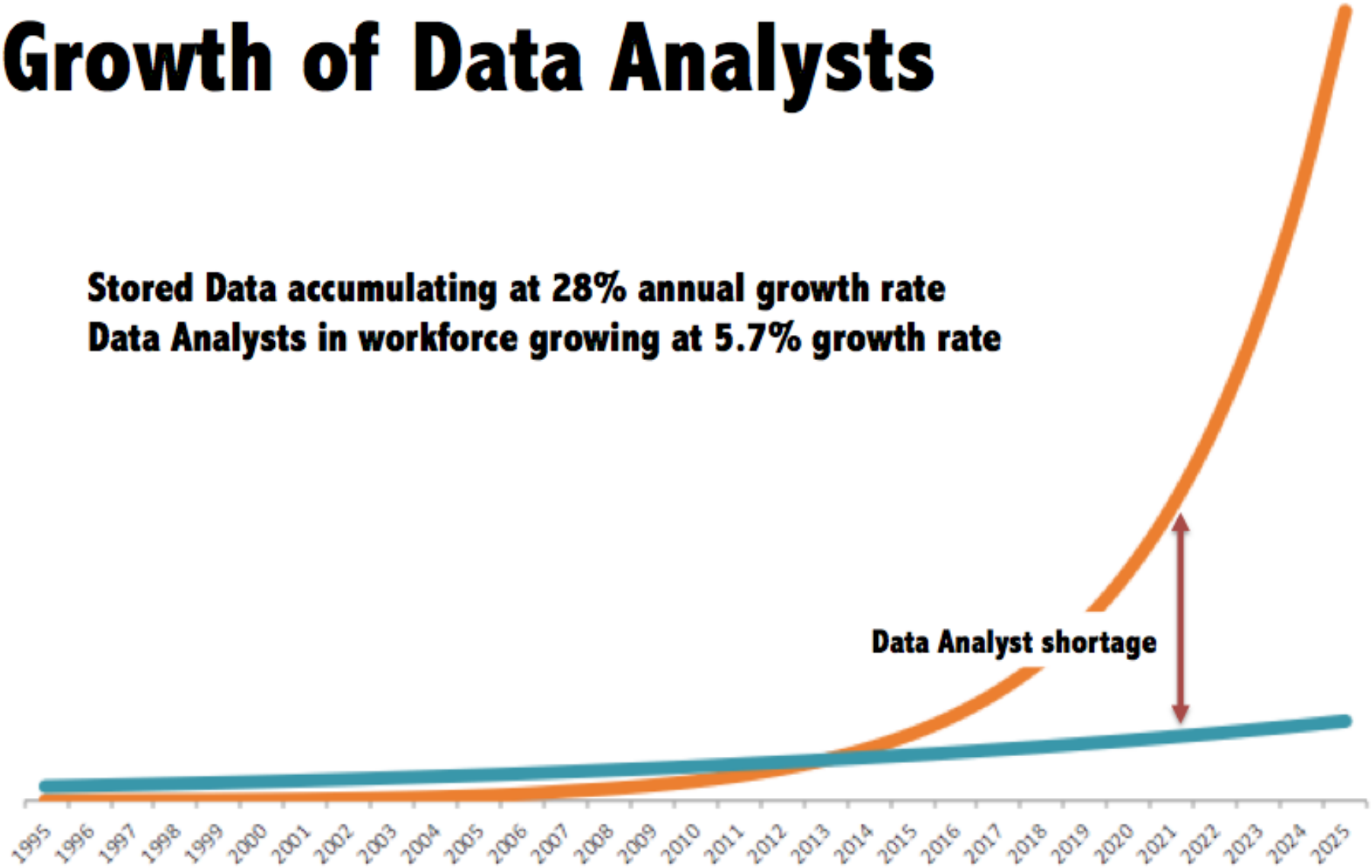
A new discipline …

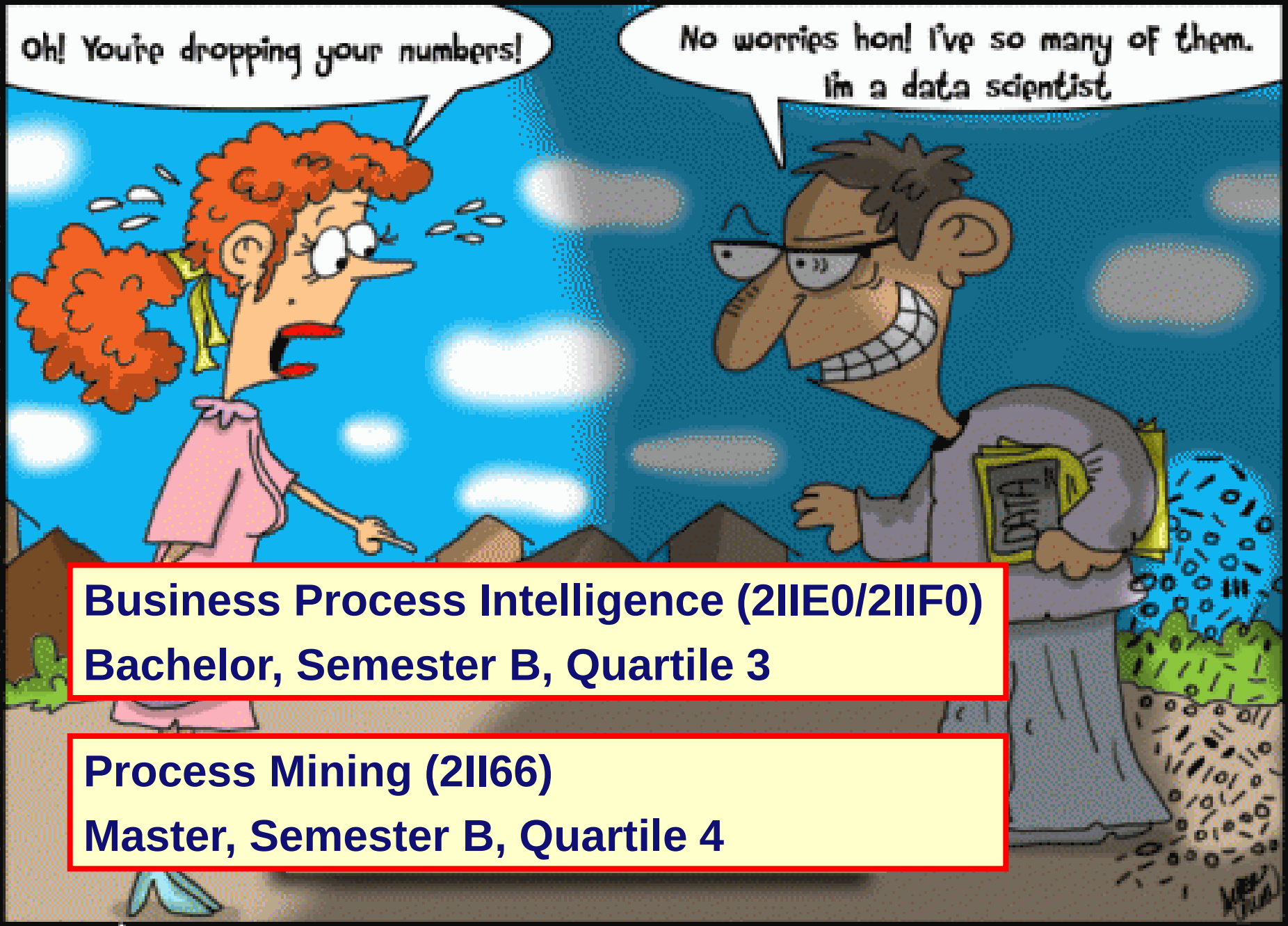


http://www.delphianalytics.net/more-data-than-analysts-the-real-big-data-problem/

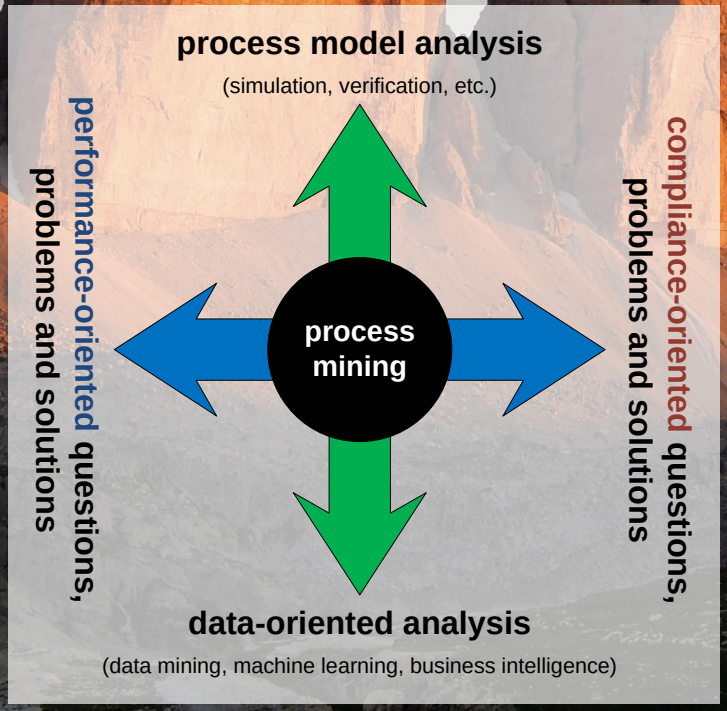
Growth of Data vs. Growth of Data Analysts

Stored Data accumulating at 28% annual growth rate
Data Analysts in workforce growing at 5.7% growth rate

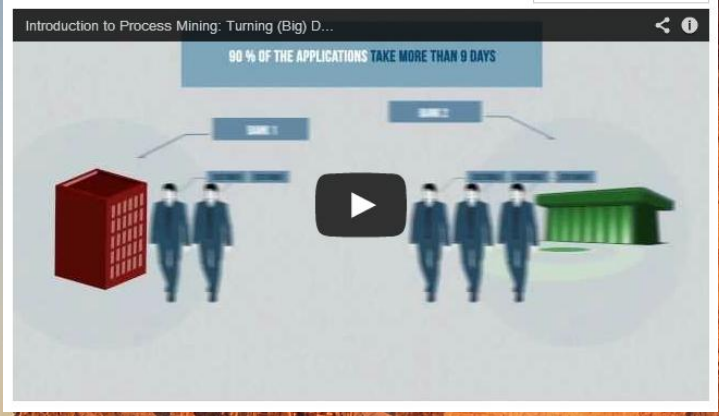



Oh! You're dropping your numbers!
No worries hon! I've so many of them. Im a data scientist
Business Process Intelligence (2IIE0/2IIF0)
Bachelor, Semester B, Quartile 3
Process Mining (2II66)
Master, Semester B, Quartile 4
www.biocomicals.com

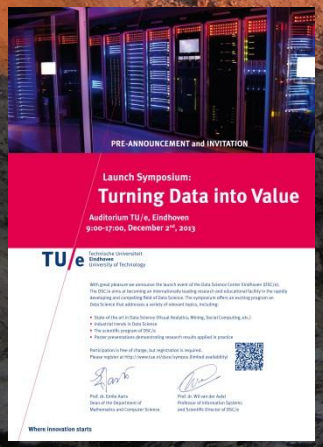
Join our expedition: Mine your processes!



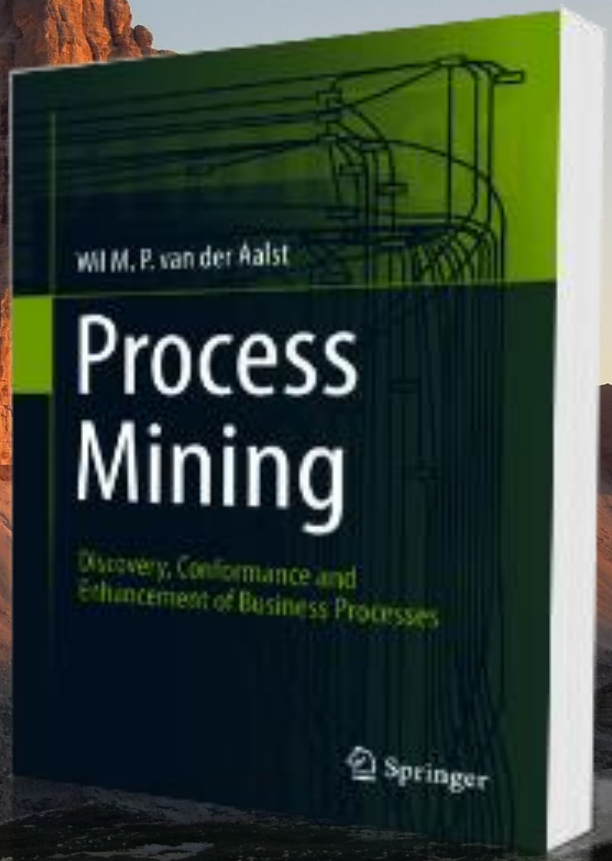
Learn more?



http://www.youtube.com/watch?v=7oat7MatU_U



DSC/e Launch Symposium: December 2nd 2013



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