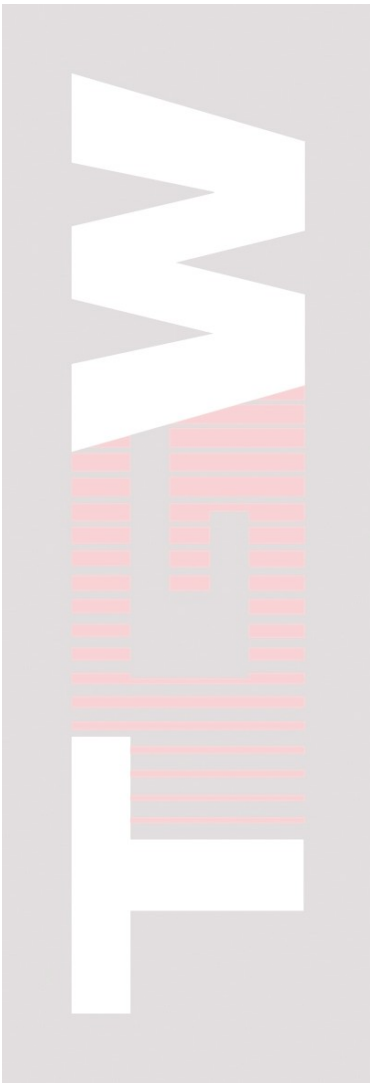


A large, stylized white 'W' logo on a light grey background, with red horizontal bars at the bottom.

Performance is rarely an accident

Martin Klier
Lead / Senior Database Administrator

TGW Software Services GmbH
Lindenweg 13
92552 Teunz

Martin Klier

- Senior Database Administrator
- TGW Logistics Group /
TGW Software Services
- Schwerpunkt Performance und
Hochverfügbarkeit
- Linux seit 1997, Oracle seit 2003
- Email: martin.klier@tgw-group.com
- Weblog: <http://www.usn-it.de>



Basiert auf:
„Thinking clearly about performance“
von

Cary Millsap

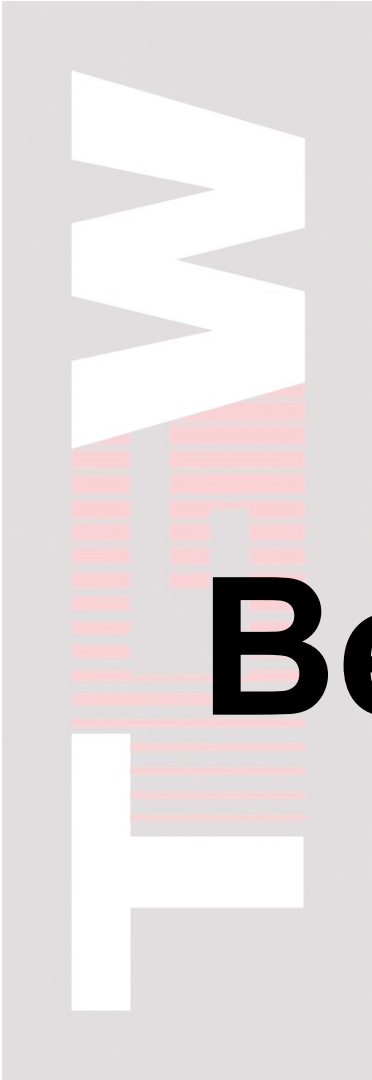


Gründer von

- Hotsos Inc.
- Method-R

with VERY friendly permission....

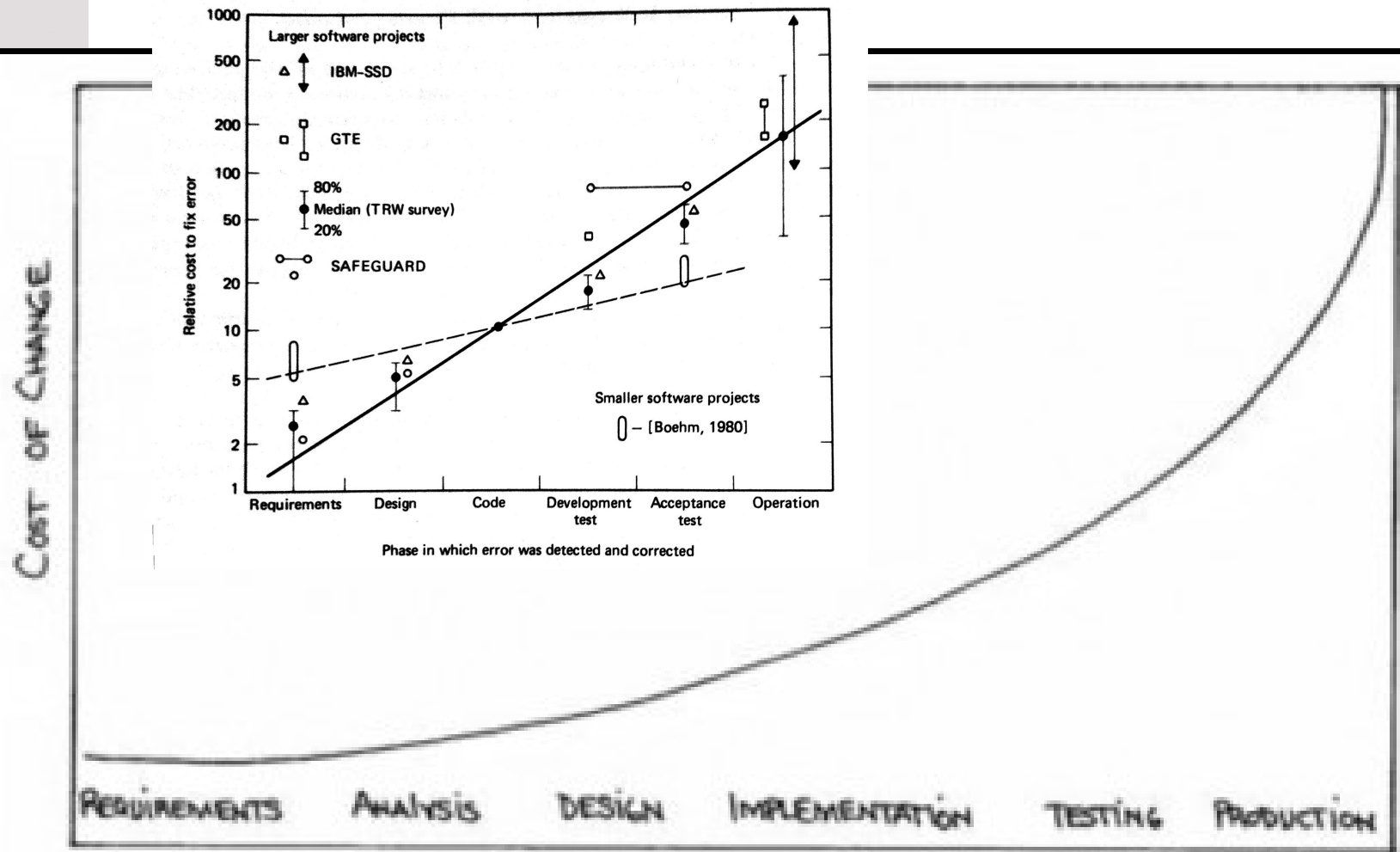
Thank you, Cary!

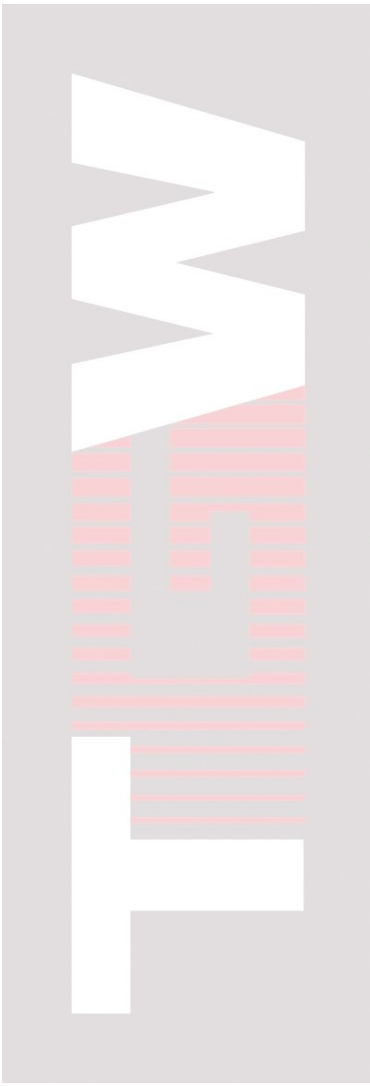
A large, light gray graphic on the left side of the slide. It features a stylized white 'W' in the upper half and a stylized white 'F' in the lower half. The 'W' and 'F' are partially overlaid by a series of horizontal red lines that create a sense of depth and movement.

Wissen zählt Beweis zählt mehr

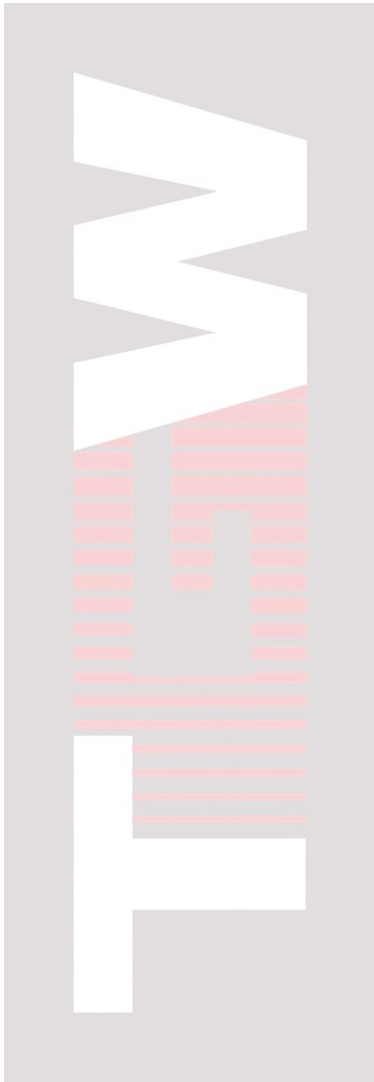
Boehm

Kosten von Änderungen



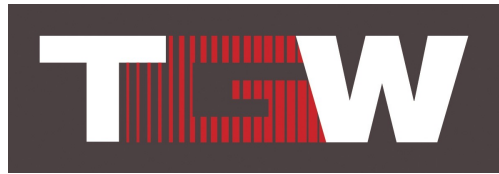
A large, light gray rectangular box containing a white, stylized letter 'W'. The 'W' is composed of several horizontal bars, with the middle section being red and the top and bottom sections being white. The box is positioned on the left side of the slide.

Wir brauchen einen Plan ...



Performance

Performance



@MartinKlierDBA - Performance is rarely an accident

Arbeit pro Zeit

Kilometer pro Stunde, Tonnen pro Monat ...

Zeit je Arbeit

Sekunden pro Buchung, Tage pro Projekt

Durchsatz:

$$p = \frac{\text{task}}{\text{time}}$$

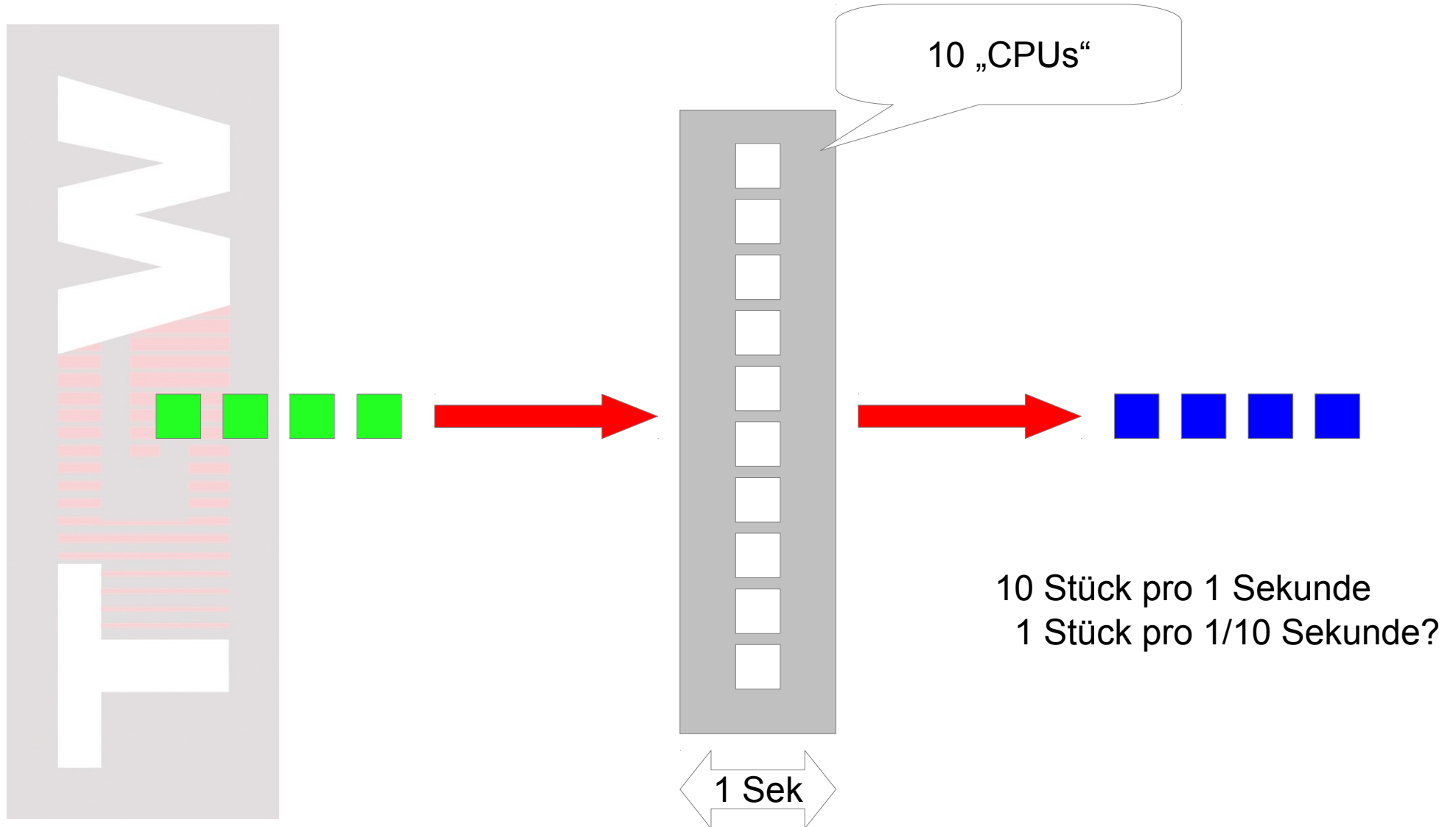
Antwortzeit:

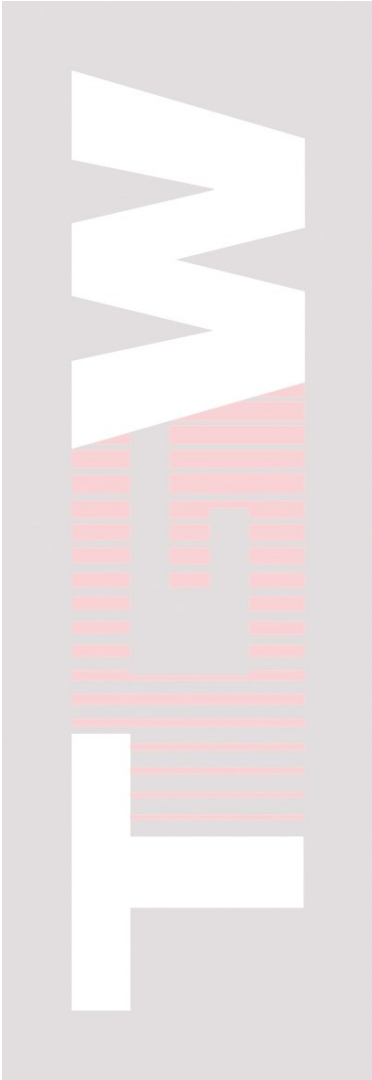
$$R = \frac{\text{time}}{\text{task}}$$

Aber:

$$R \neq \frac{1}{p}$$

Kehrwertspiele



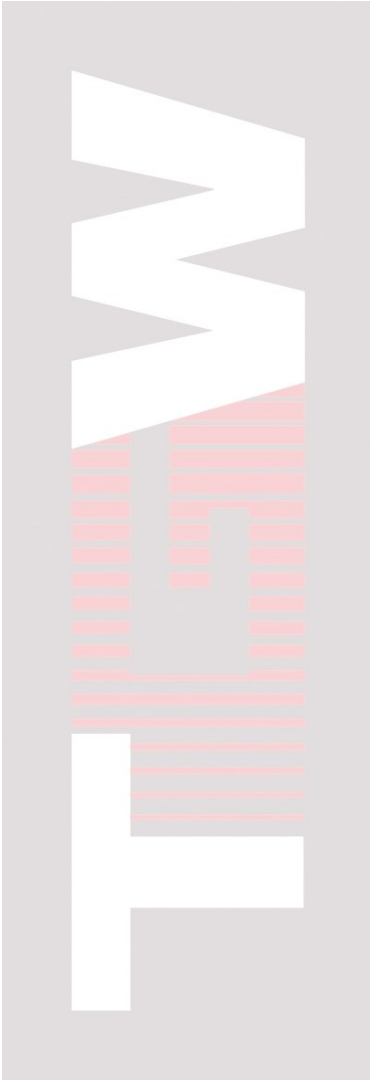
A large, light gray rectangular area on the left side of the slide. Inside, there is a large white 'W' at the top and a large white 'F' at the bottom. Between the 'W' and 'F', there are several horizontal red lines of varying lengths, creating a stylized graphic element.

Der Mittelwert

Vom Mittelwert

0,9; 1,3; 0,9; 0,9;

0,3; 0,3; 0,3; 0,3; 0,3; 1,3; 0,3; 0,3; 0,3; 0,3;

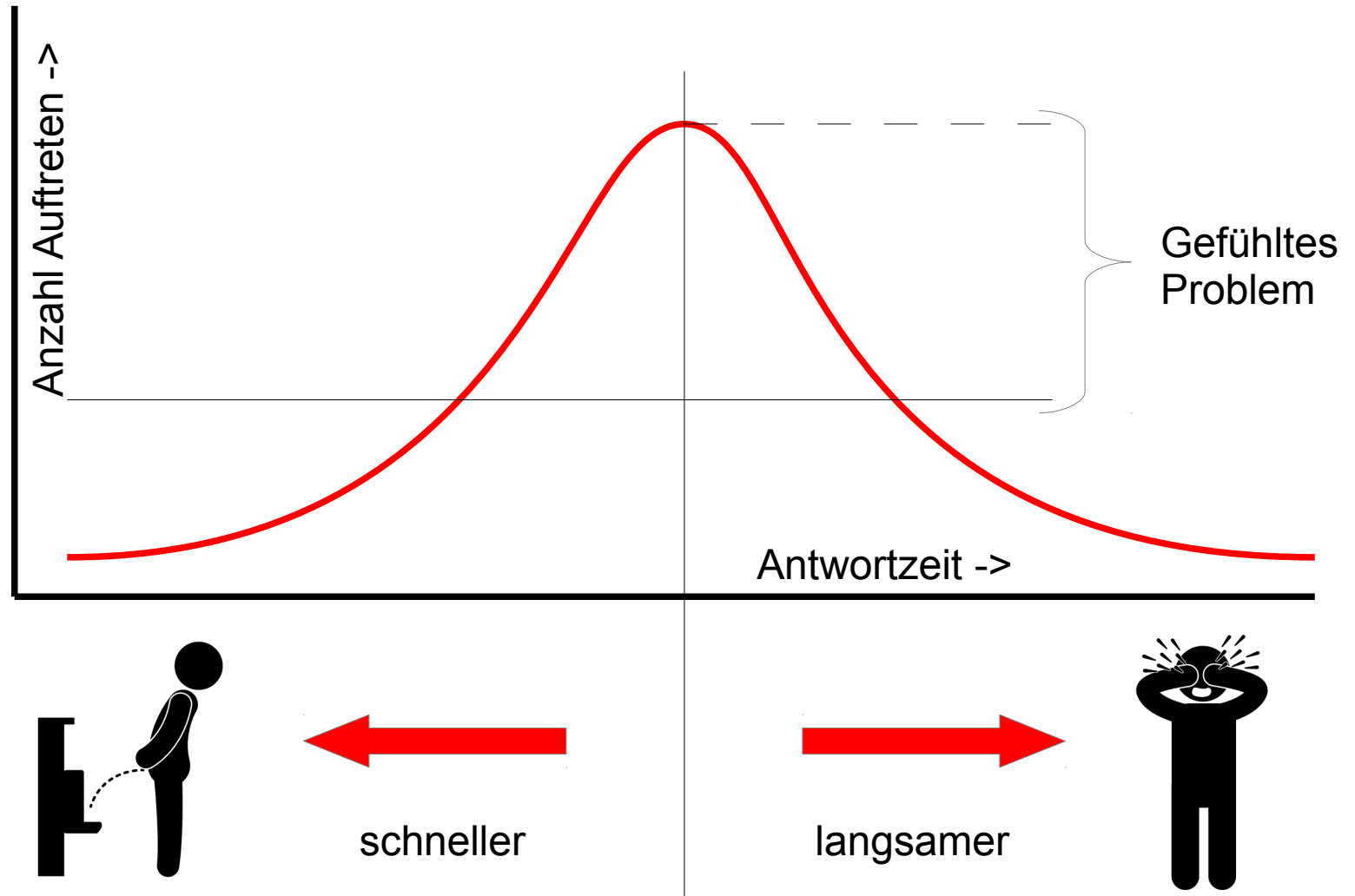
A large, stylized white letter 'W' is positioned on the left side of the slide. It is partially overlaid by a series of horizontal red lines of varying lengths, which are contained within a light gray rectangular frame. The 'W' is composed of several sharp, angular shapes.

Vorgabe Antwortzeit: 1s in 99% der Fälle

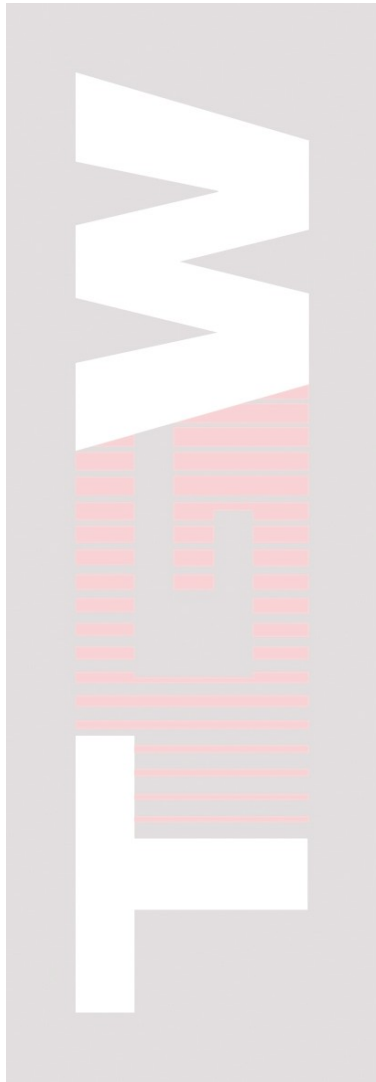
Das ist schon mal etwas....

.... aber

User spüren die Abweichung - und nicht den Mittelwert!



Lösungsweg



Stand heute

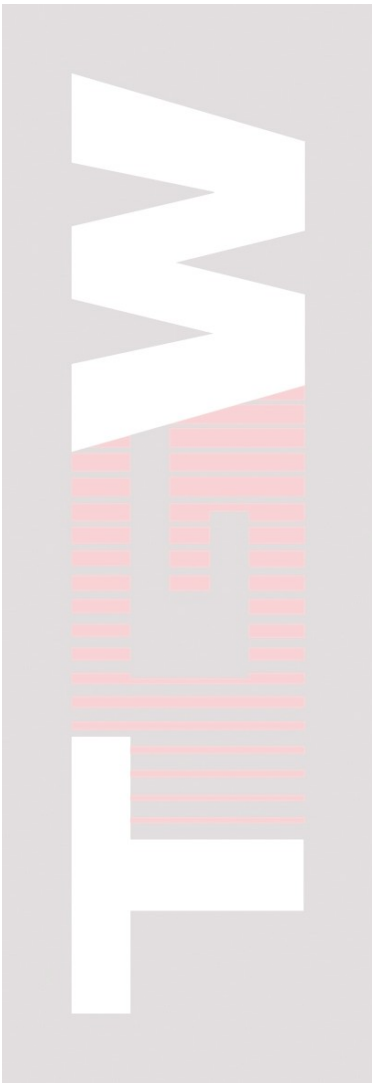
Bemessung

€ € €

Relevanz

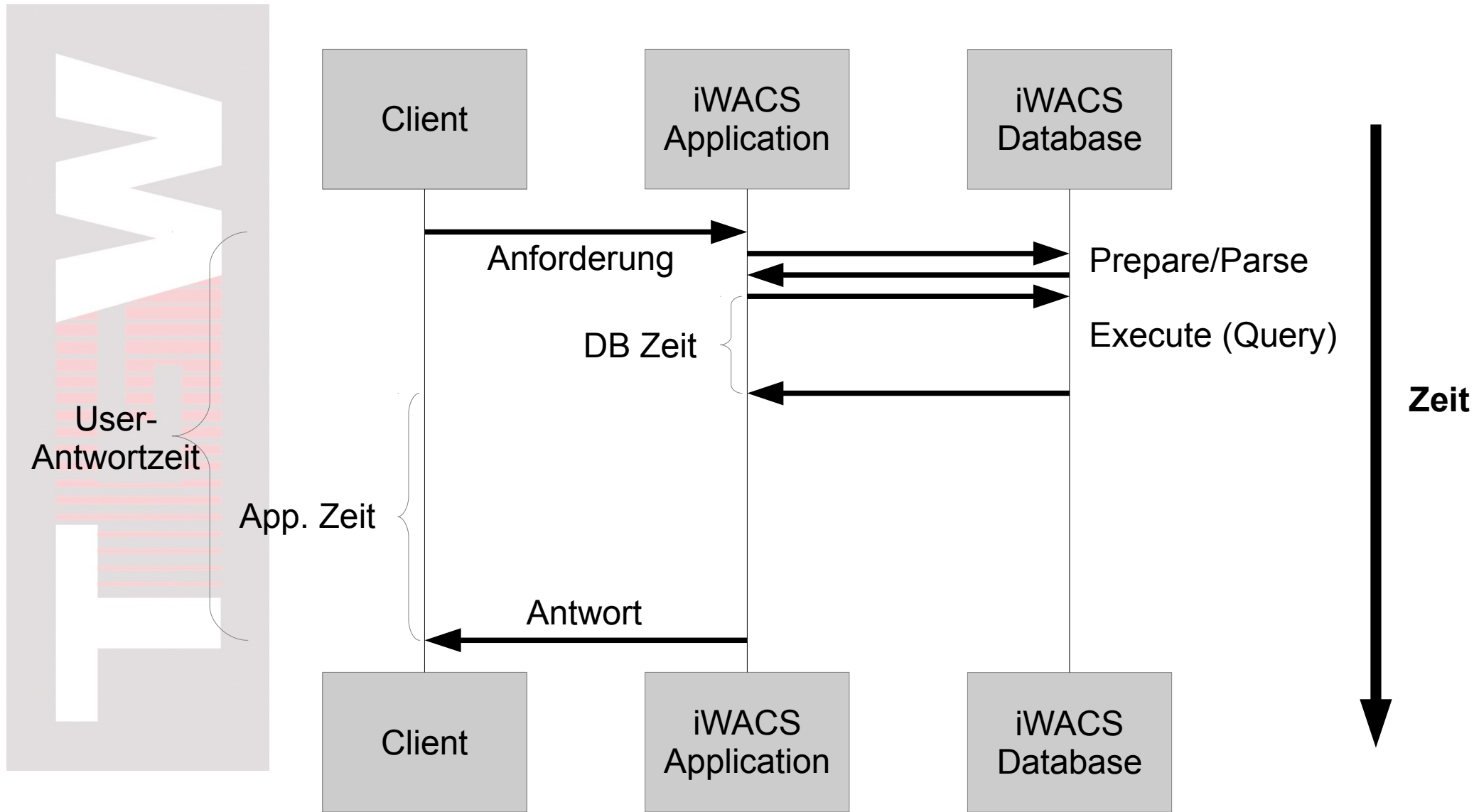
Ziel

Definition nötig!!

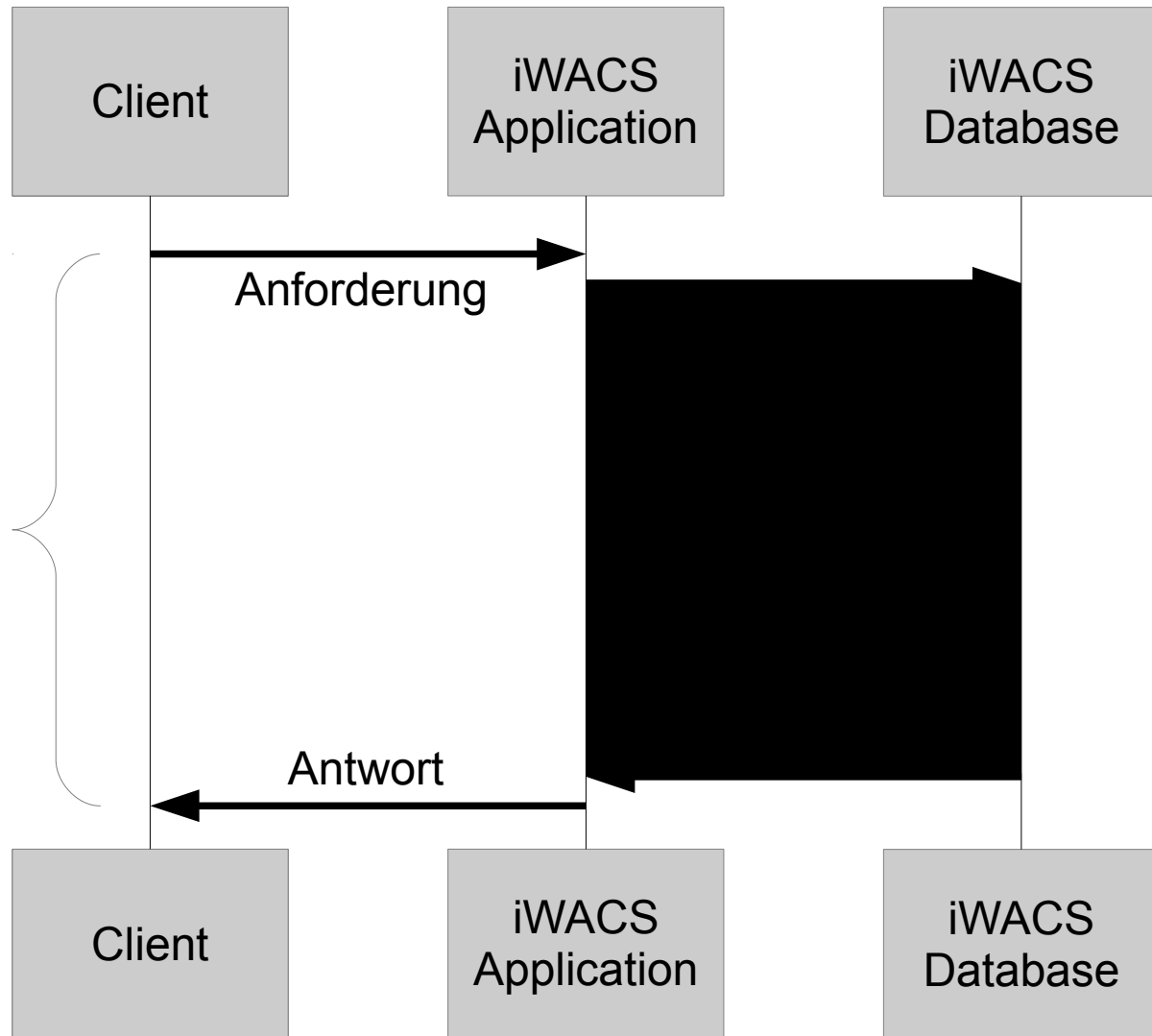
A large, vertical watermark is positioned on the left side of the slide. It features the letters 'TEW' in a light gray, sans-serif font. The 'E' is stylized with horizontal red lines, matching the design of the top-right logo. The watermark is semi-transparent and spans most of the slide's height.

Analyse

Sequenzdiagramm (UML)

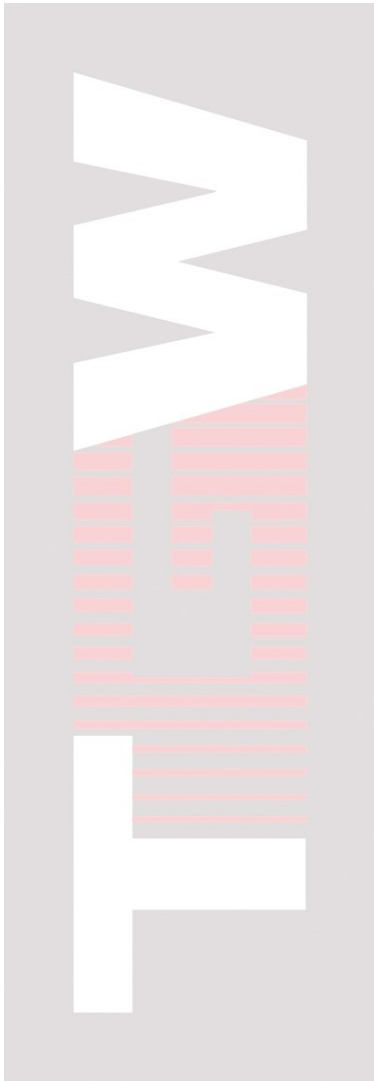


Sequenzdiagramm (UML)



Profiling

Profil



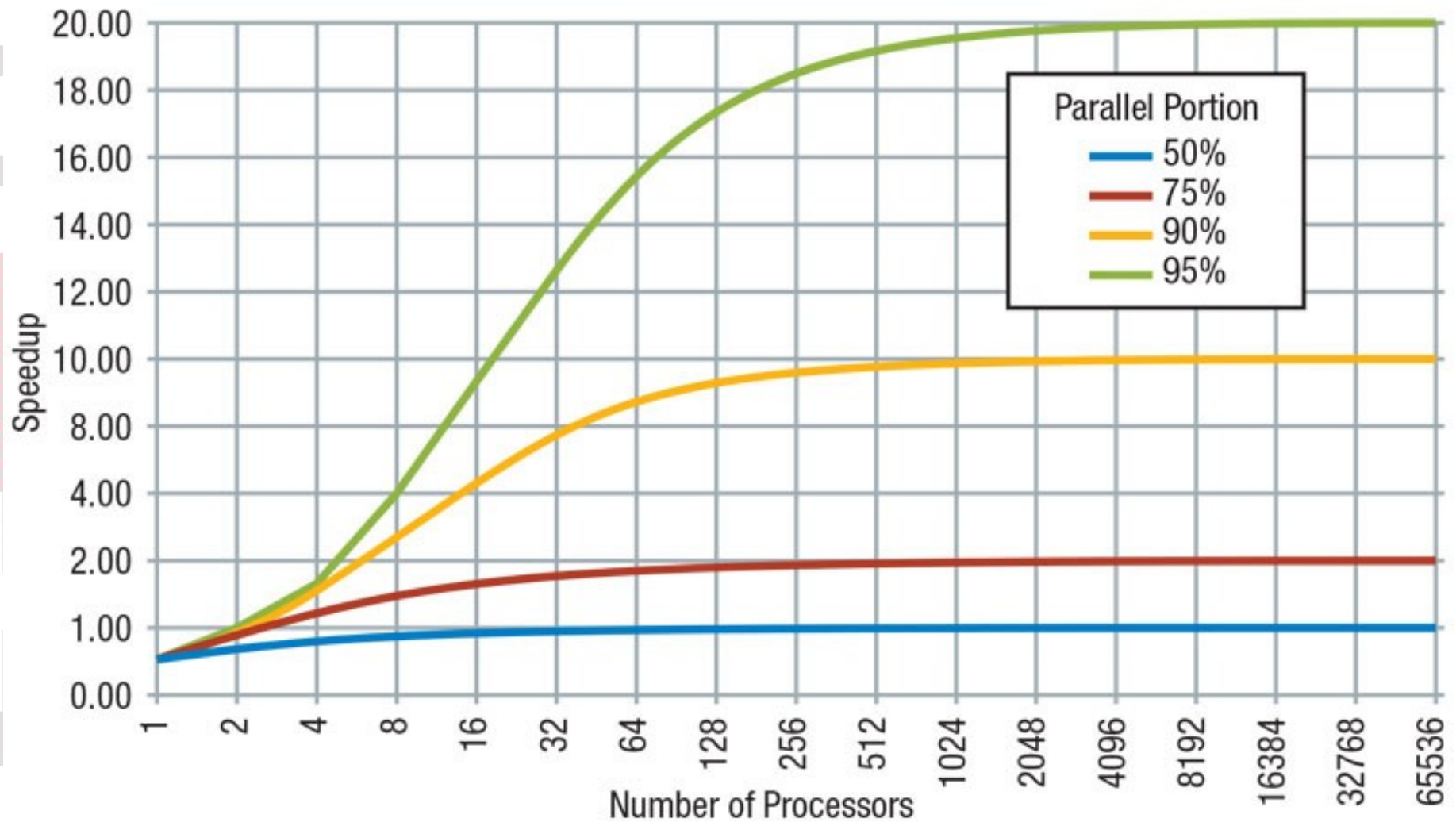
Funktion	R	Anzahl
Dialog-Frontend Seitenaufbau	1700s	35.000
Dialog-Frontend DB-Zugriff	300s	2.500.000
Hintergrund- Prozess XML- Verarbeitung	100s	100.000
Hintergrund- Prozess DB Zugriff	97s	34.000

Zielzeit erreichbar??

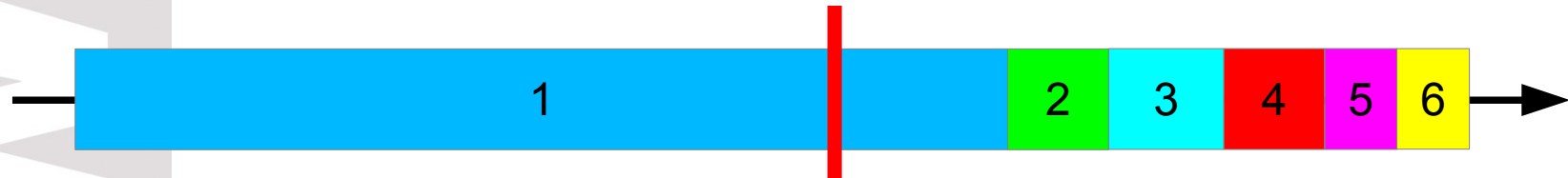
A large, light gray rectangular box containing a stylized white 'W' and 'F' logo. The 'W' is formed by three white chevrons pointing downwards, and the 'F' is a simple white outline. A red and white striped pattern is visible behind the 'W' and 'F'.

Amdahlsches Gesetz

Amdahlsches Gesetz - Speziell



Amdahlsches Gesetz - Allgemein



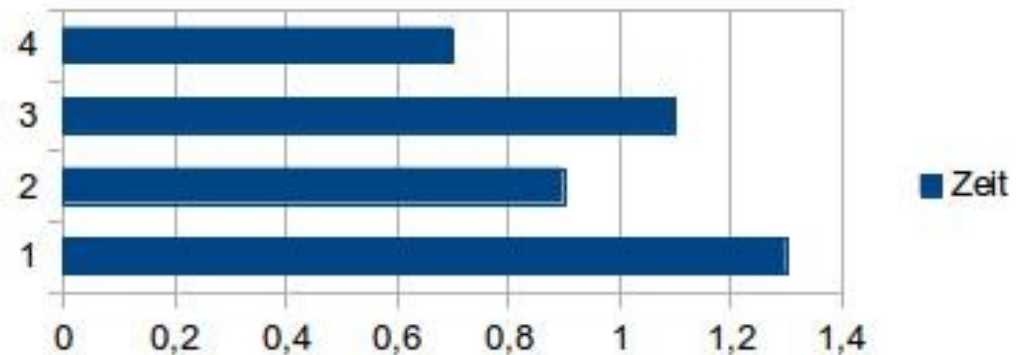
#	Mögl. Verbesserung	Kosten	R	R%
1	34%	€€€€	1.700s	70%
2	12 %	€	300s	13%
3	keine	-	100s	6%
4	4 %	€	97s	4%
5	0,1%	€€€€	58s	3%
6	1,6%	€	48s	2%
...	...	...	...	...

Ausreißer (Skew)

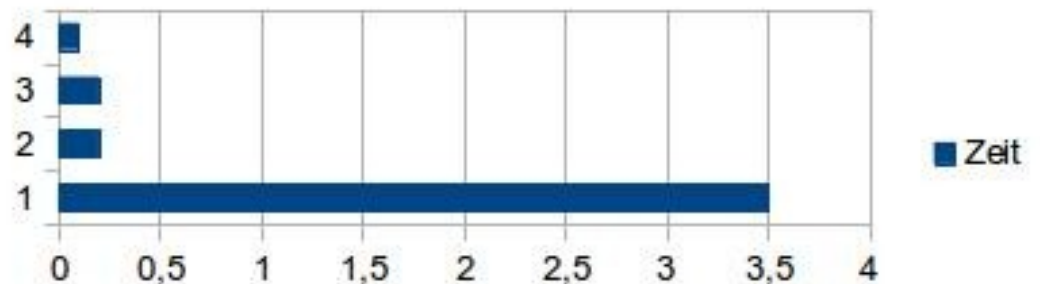
Ausreißer einfangen

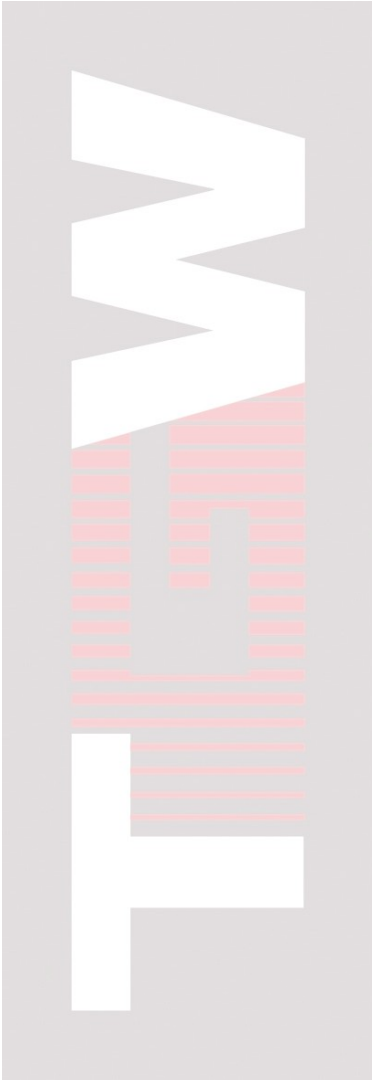
4 calls = 4 sek
2 calls = ? sek

Ereignis	Dauer in Sekunden
1	1,3
2	0,9
3	1,1
4	0,7



Ereignis	Dauer in Sekunden
1	3,5
2	0,2
3	0,2
4	0,1

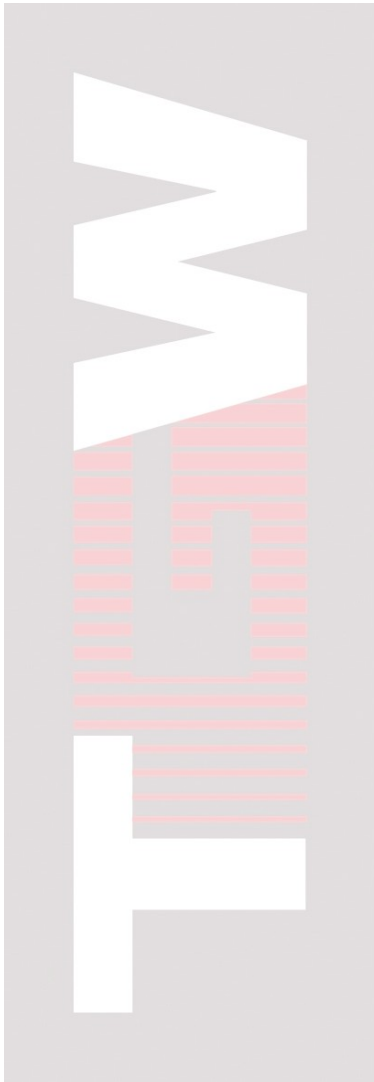


A large, light gray rectangular box containing a stylized white 'W' and 'F' logo. The 'W' is at the top and the 'F' is at the bottom, with a red and white striped pattern filling the space between them.

Risiko- Minimierung

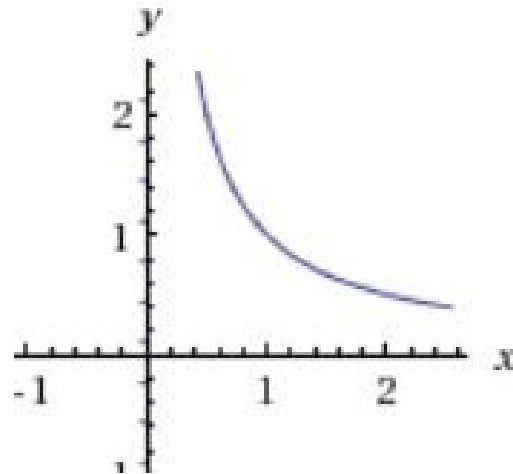
Einschub: Risikominimierung bei Eingriffen

Wenn alle außer Dir zufrieden sind
bringe Deinen Stall lokal in Ordnung
bevor Du globale „Problemlösungen“ einbaust
die alle anderen auch beeinträchtigen



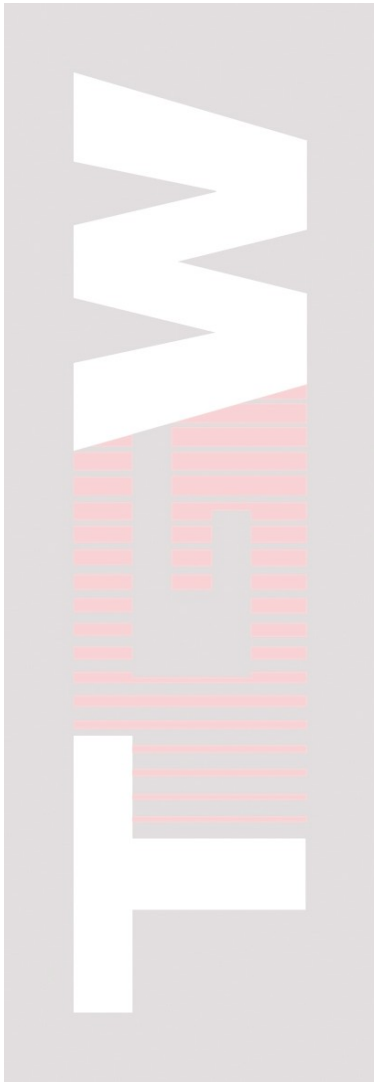
Effizienz

$$\textit{Verschwendung} = \frac{1}{\textit{Effizienz}}$$



Obviously, the highest type of efficiency is
that which can utilize existing material
to the best advantage

-- Jawaharlal Nehru

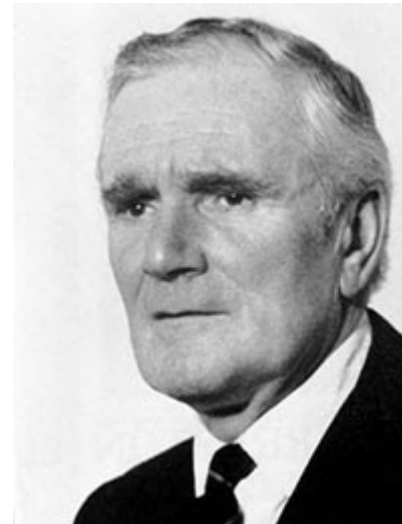


Last

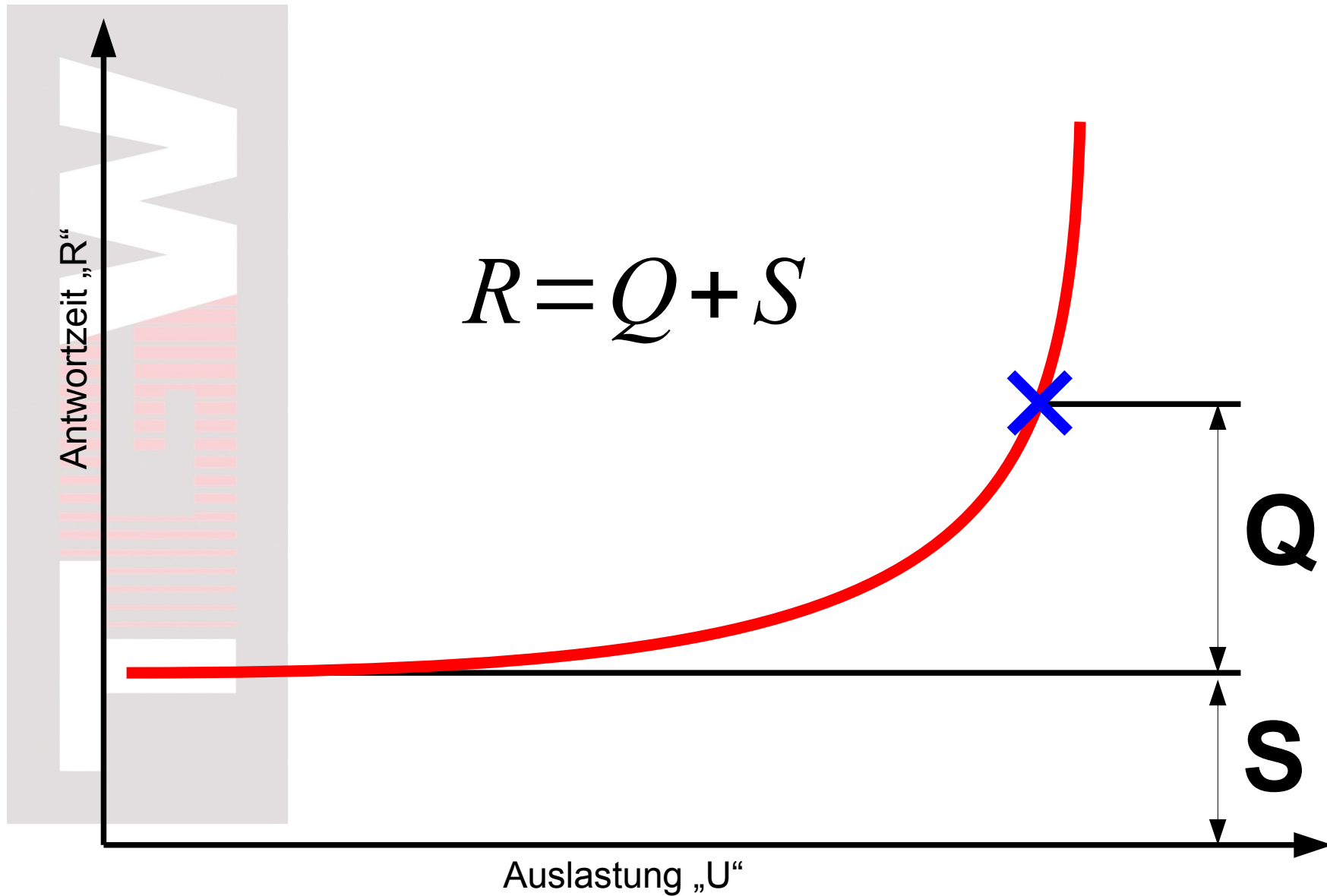
Verzögerung durch „Q“

Funktion	R	Anzahl	Typ
Anstellen	0s - 600s	1	Q
McMenü in Kasse inkl. Rückfragen	30s	2	S
Pommes holen	45s	2	S
Getränk fertigen	45s	2	S
Burger warten	120s	1	S
Burger holen	10s	2	S
...	...	...	...

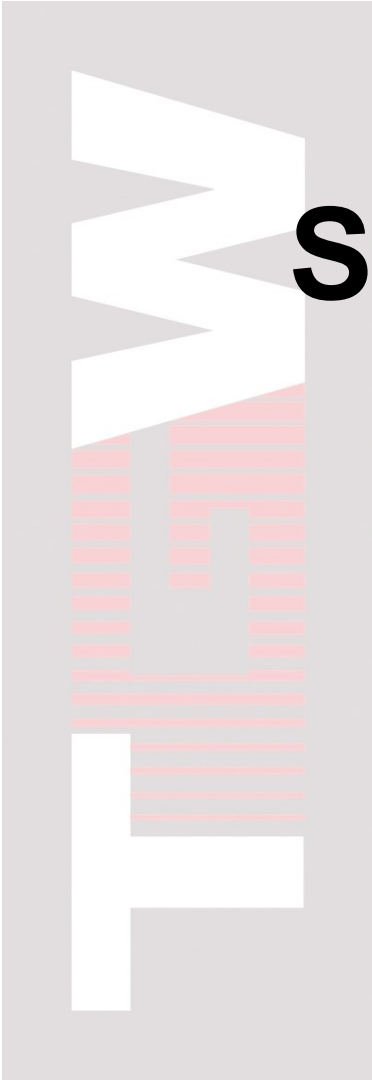
„Q“ - Diagramm



„Q“ - Diagramm



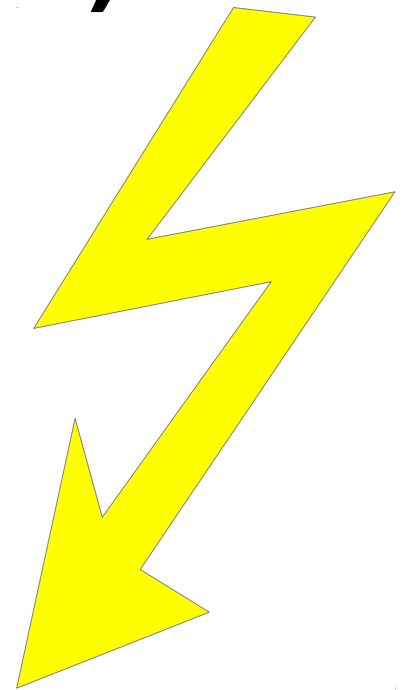
Das Knie oder Der Knick

A vertical decorative graphic on the left side of the slide. It features a grey background with a white stylized 'Z' or 'W' shape. Below this, there are horizontal red and white stripes, and at the bottom, a white 'T' shape.

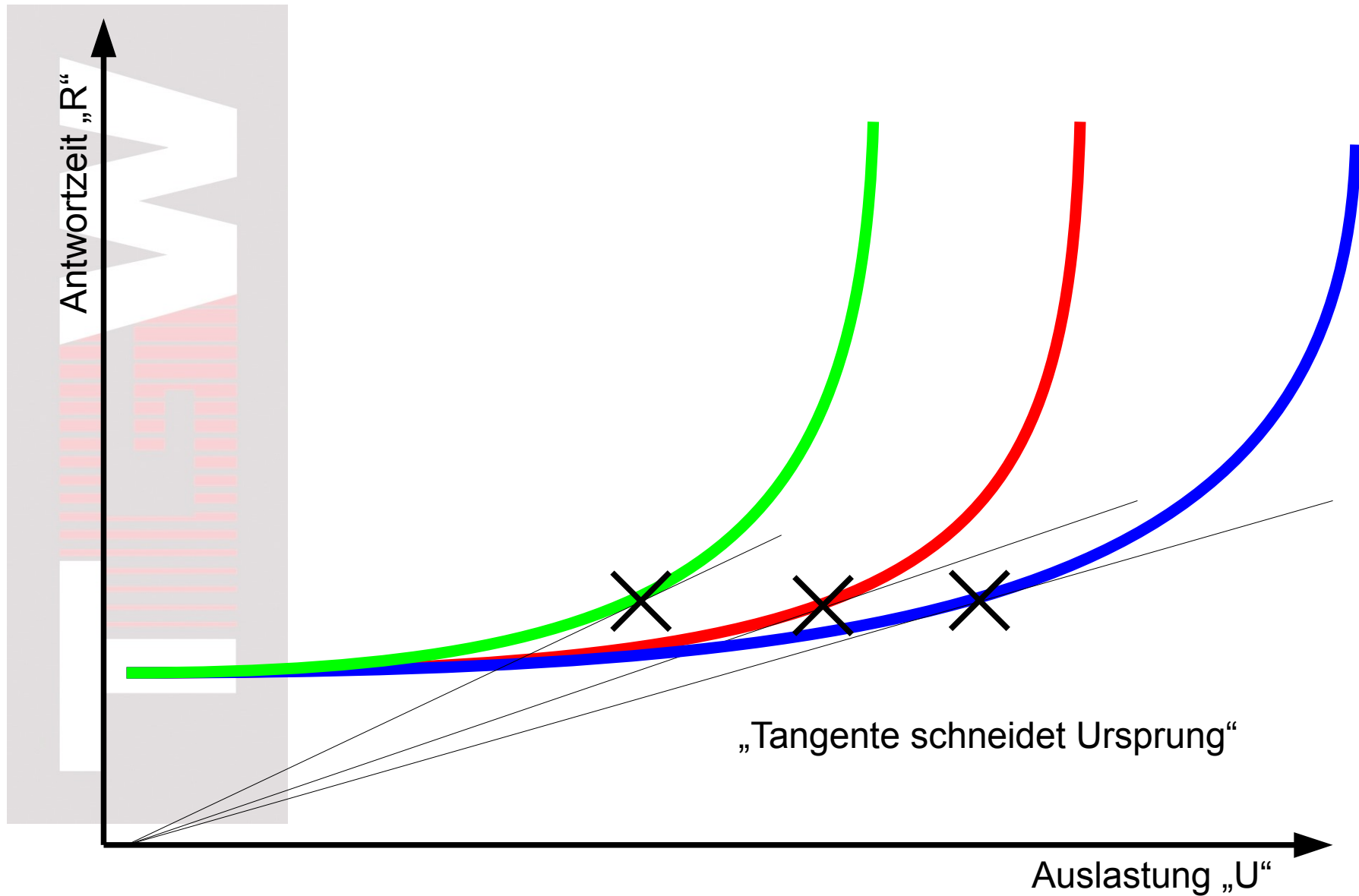
Schnelle Antwortzeit (R)

vs.

Hoher Durchsatz



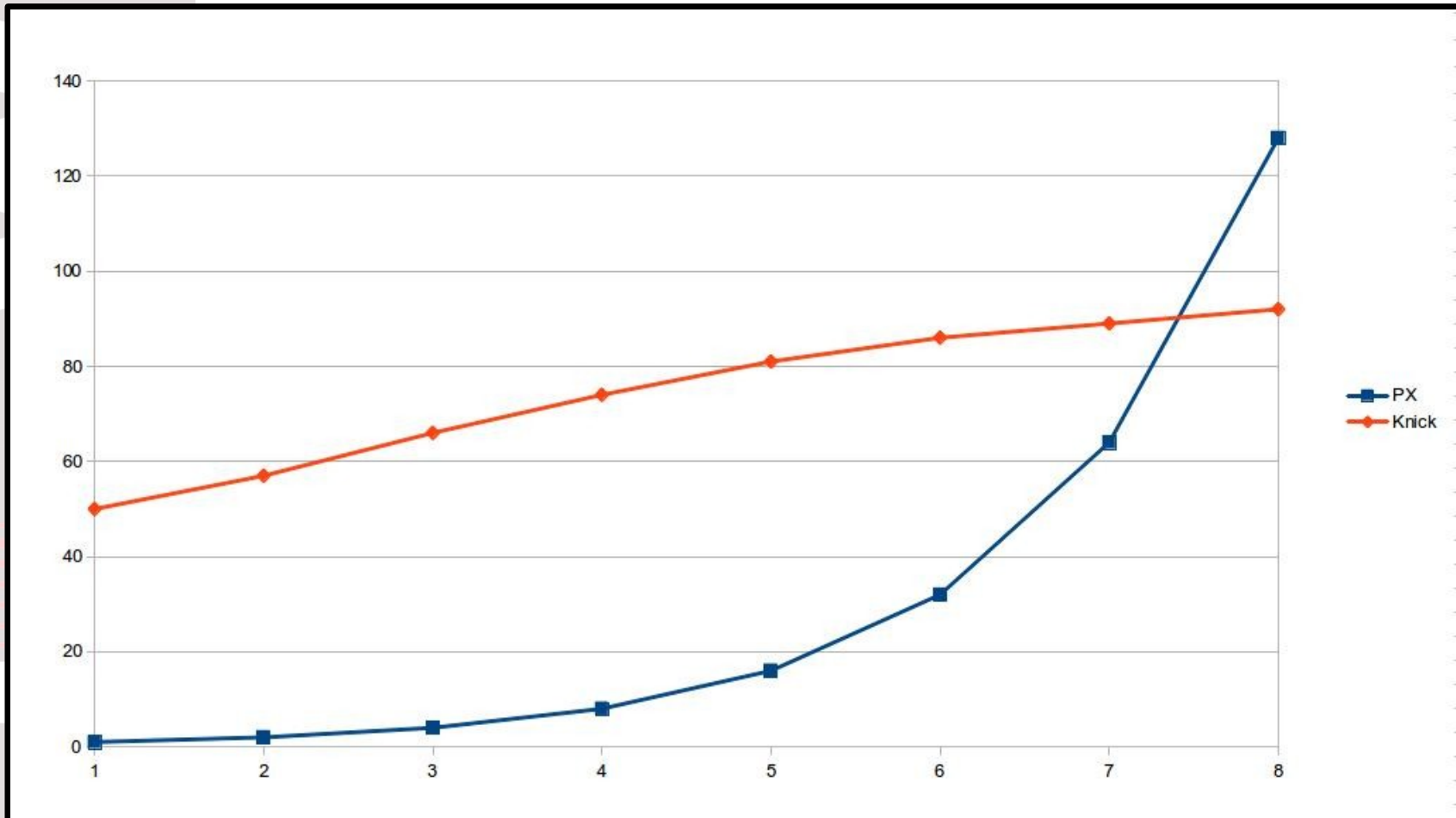
Der Knick



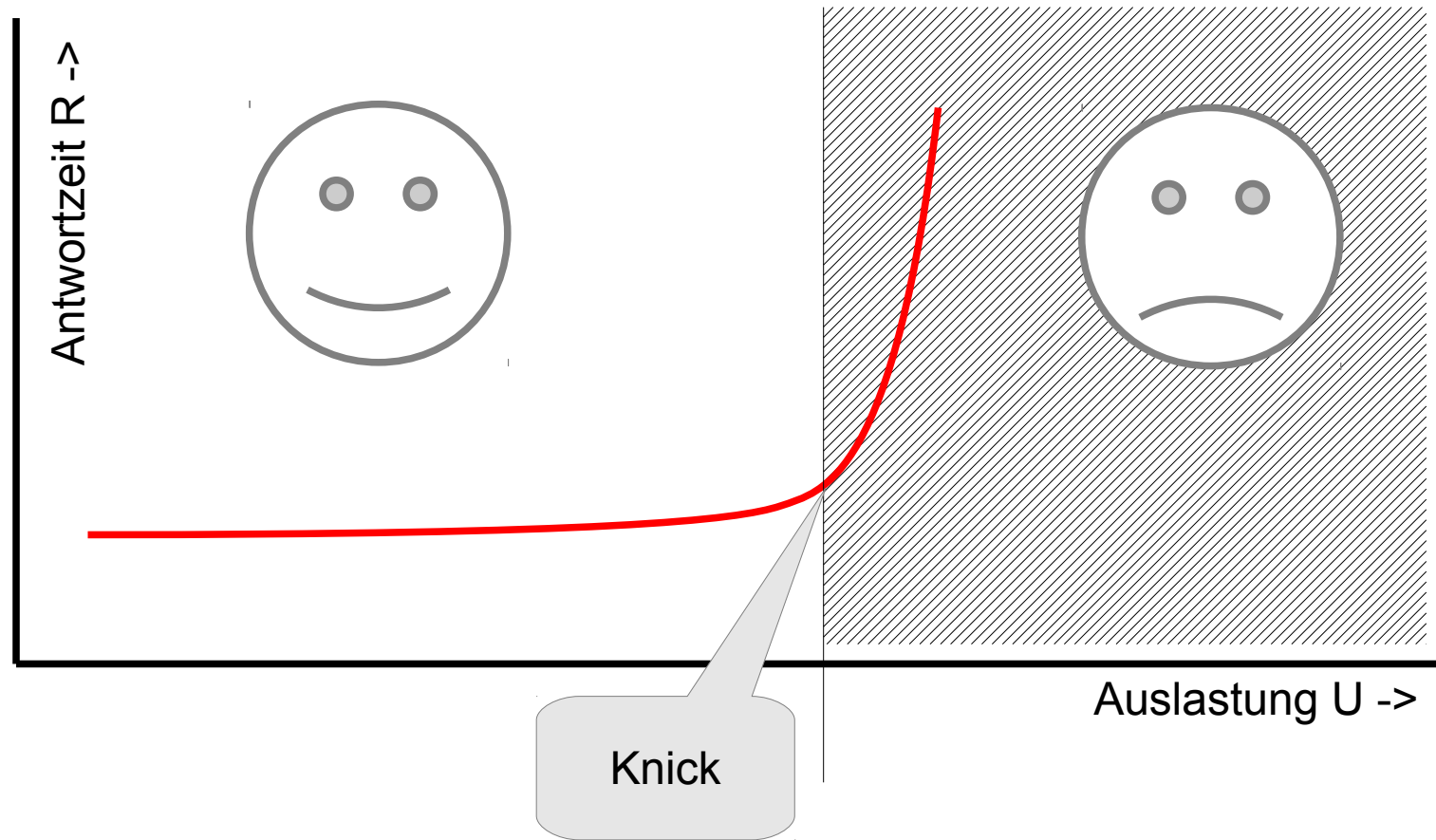
Skalierung: Knick folgt verzögert

Service-Kanäle / Parallelität	Knie / Knickpunkt der Auslastung
1	50%
2	57%
4	66%
8	74%
16	81%
32	86%
64	89%
128	92%

Skalierung: Knick folgt verzögert



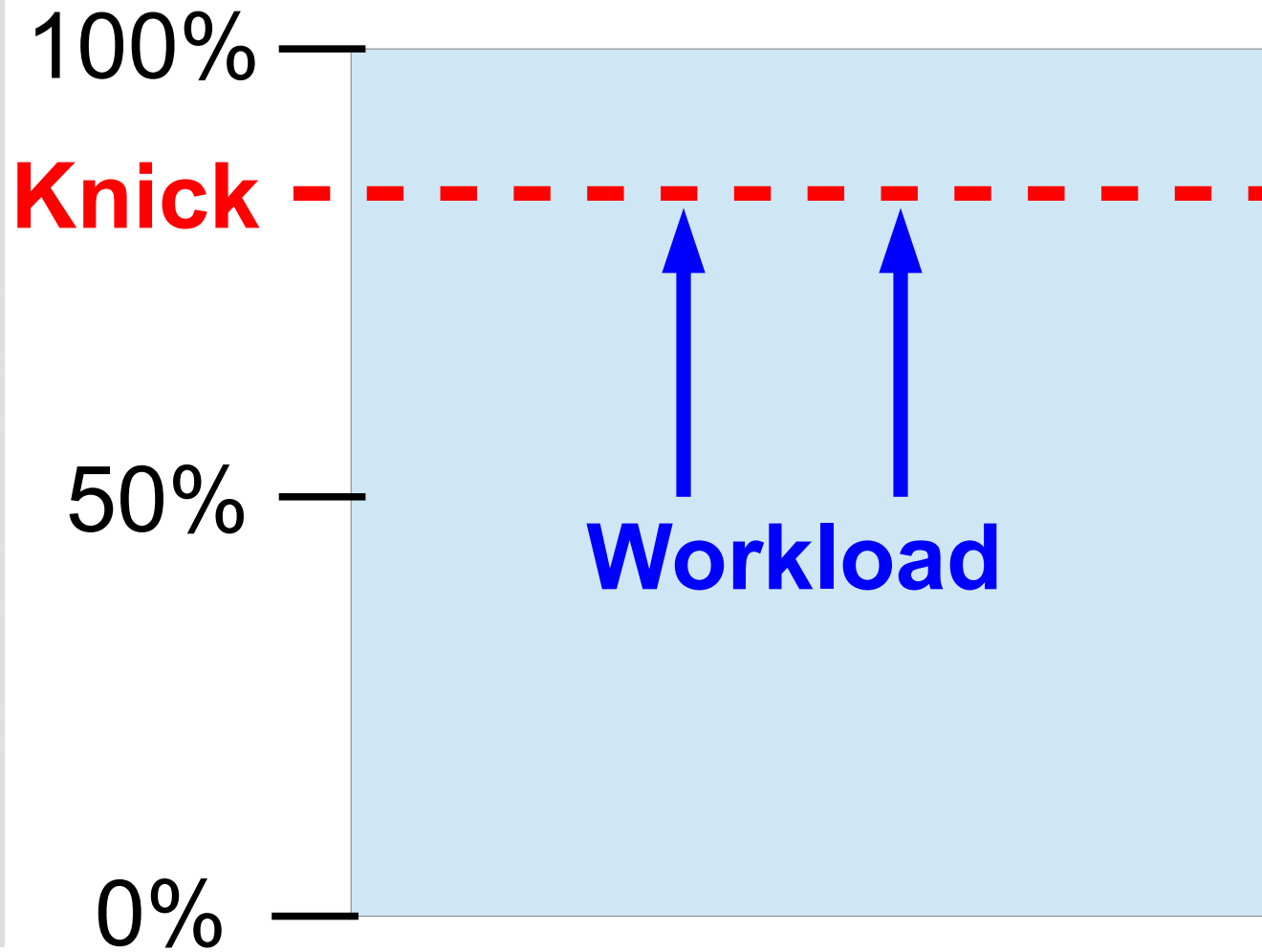
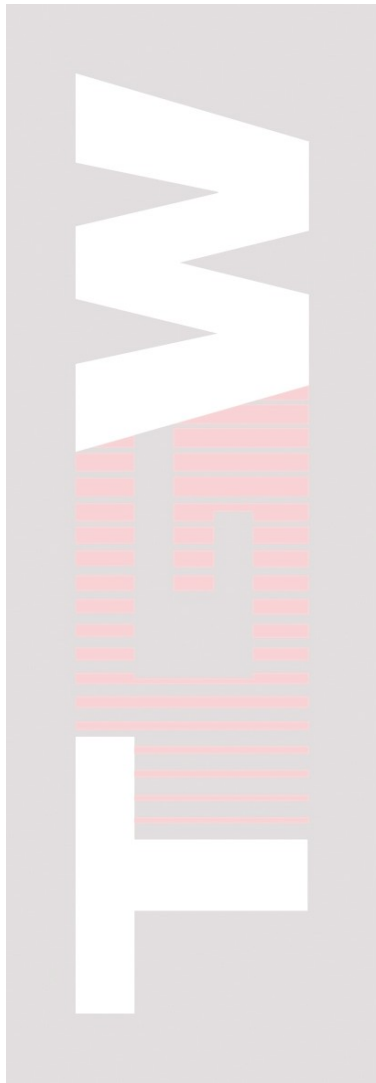
Relevanz des Knicks



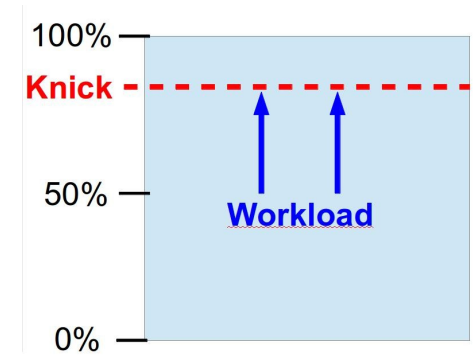
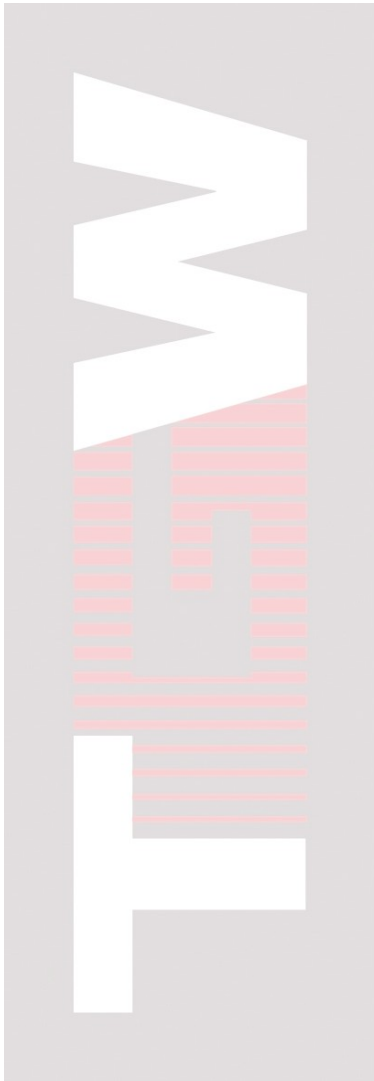
A large, light grey rectangular box containing a stylized white 'W' logo. The 'W' is composed of several horizontal bars of varying lengths, creating a zigzag pattern. The bottom part of the 'W' is filled with red horizontal bars.

Kapazitätsplanung

Kapazitätsplanung



Kapazitätsplanung



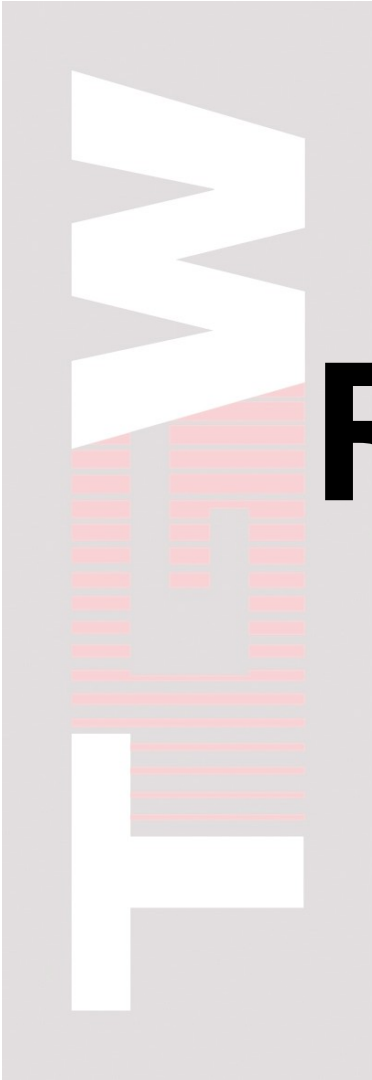
Kapazitätsplanung:

Wie groß muss das System sein?

Last-Management:

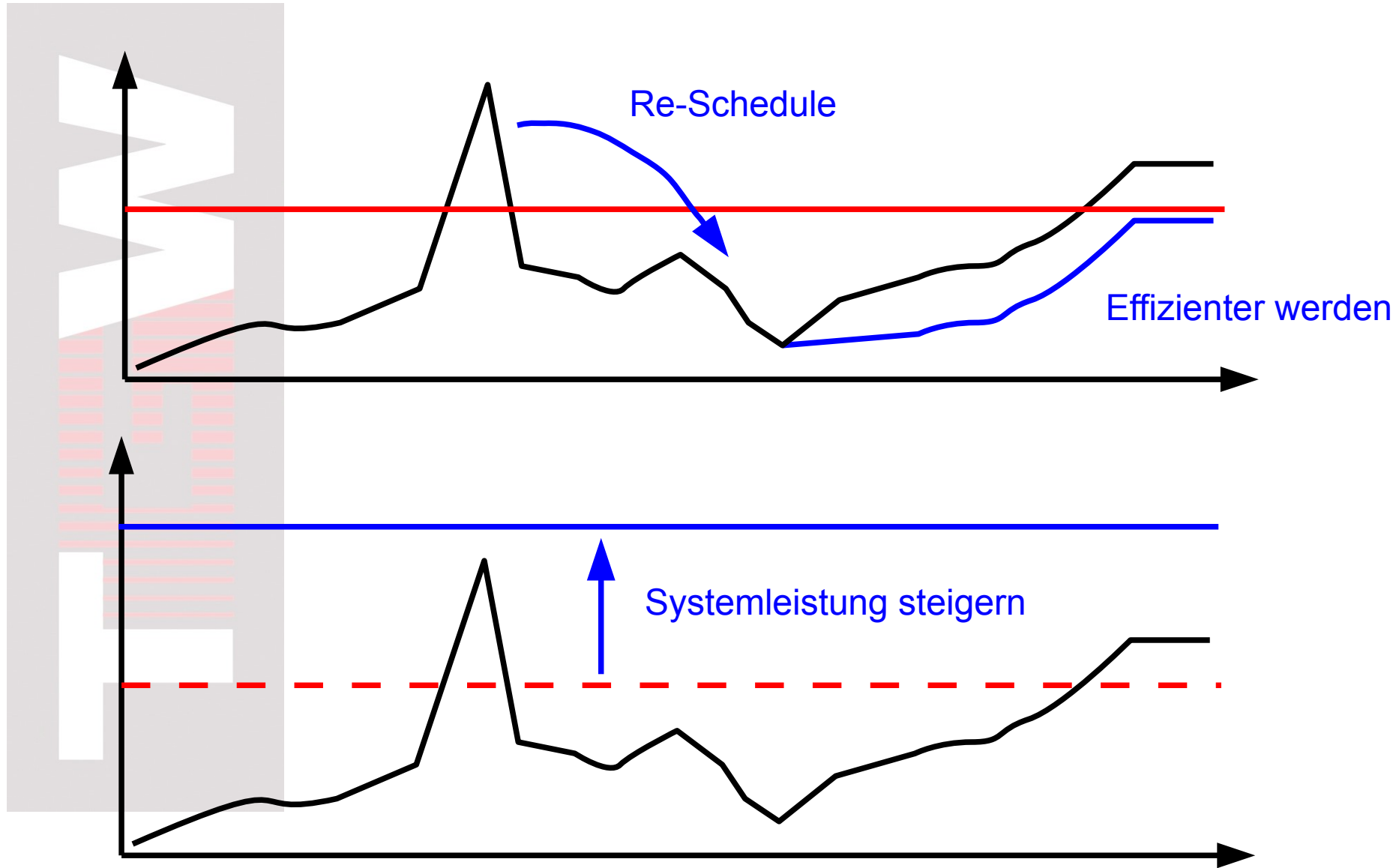
Wie klein kann das System sein?

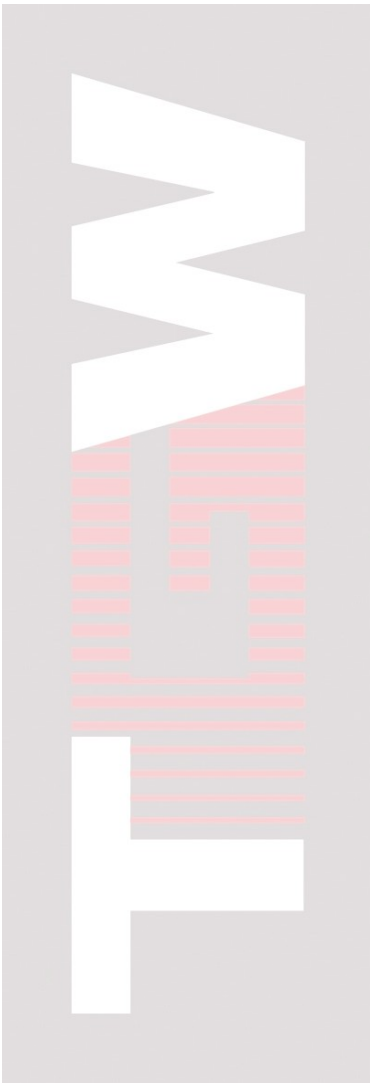
=> Der Knick ist unsere „Rote Linie“

A vertical decorative graphic on the left side of the slide. It features a light gray rectangular background. Inside, there is a white stylized 'W' shape at the top and a white stylized 'F' shape at the bottom. Between these two shapes, there are several horizontal red lines of varying lengths, creating a striped effect.

Reduzieren von Peaks

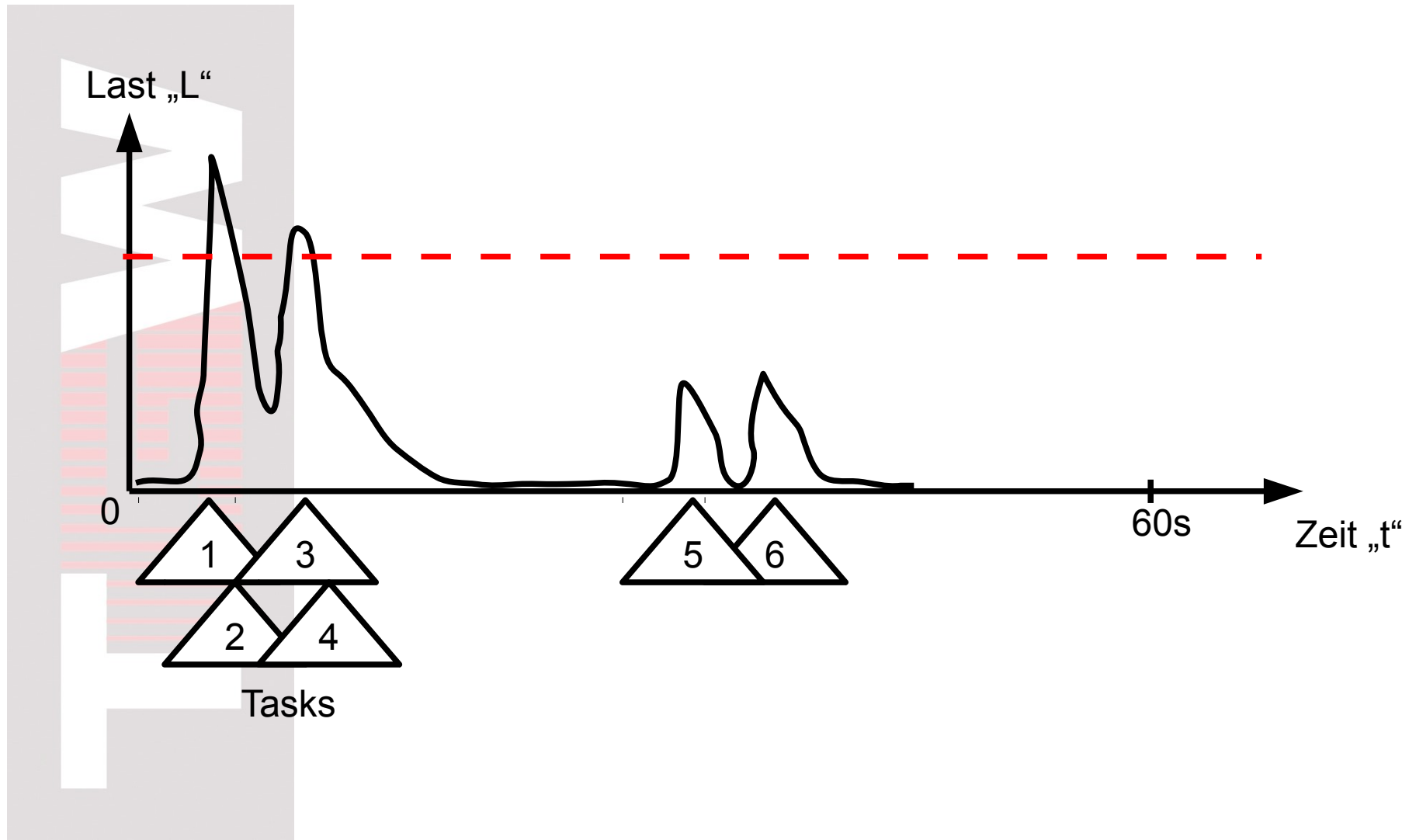
Peaks



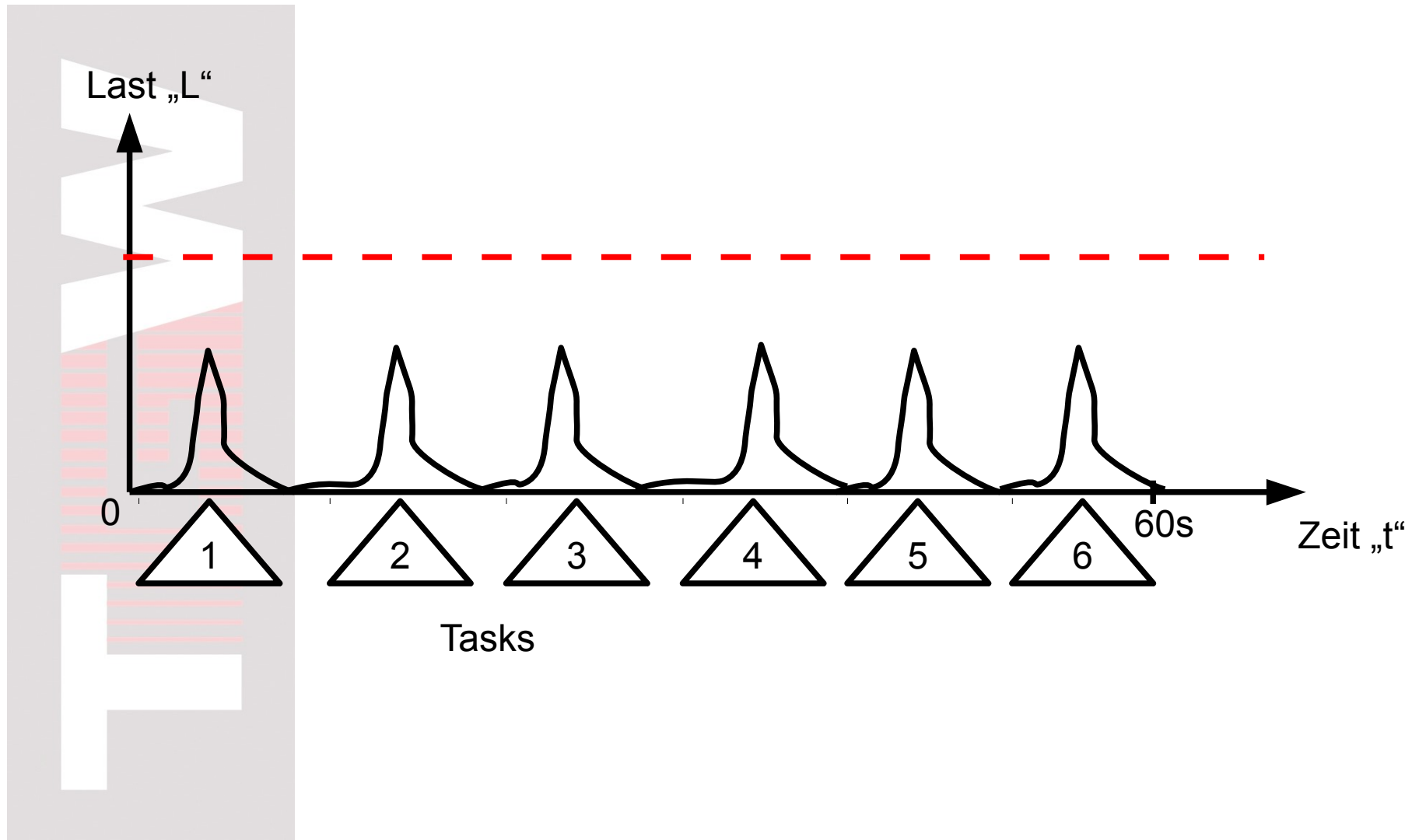
A large, stylized logo is positioned on the left side of the slide. It features a white 'W' and a white 'F' stacked vertically, both set against a light grey rectangular background. The 'W' is composed of three horizontal bars, and the 'F' is composed of two horizontal bars. The background of the logo has a red and white striped pattern.

Einlasten von Aufträgen („Random Arrivals“)

Zufällig



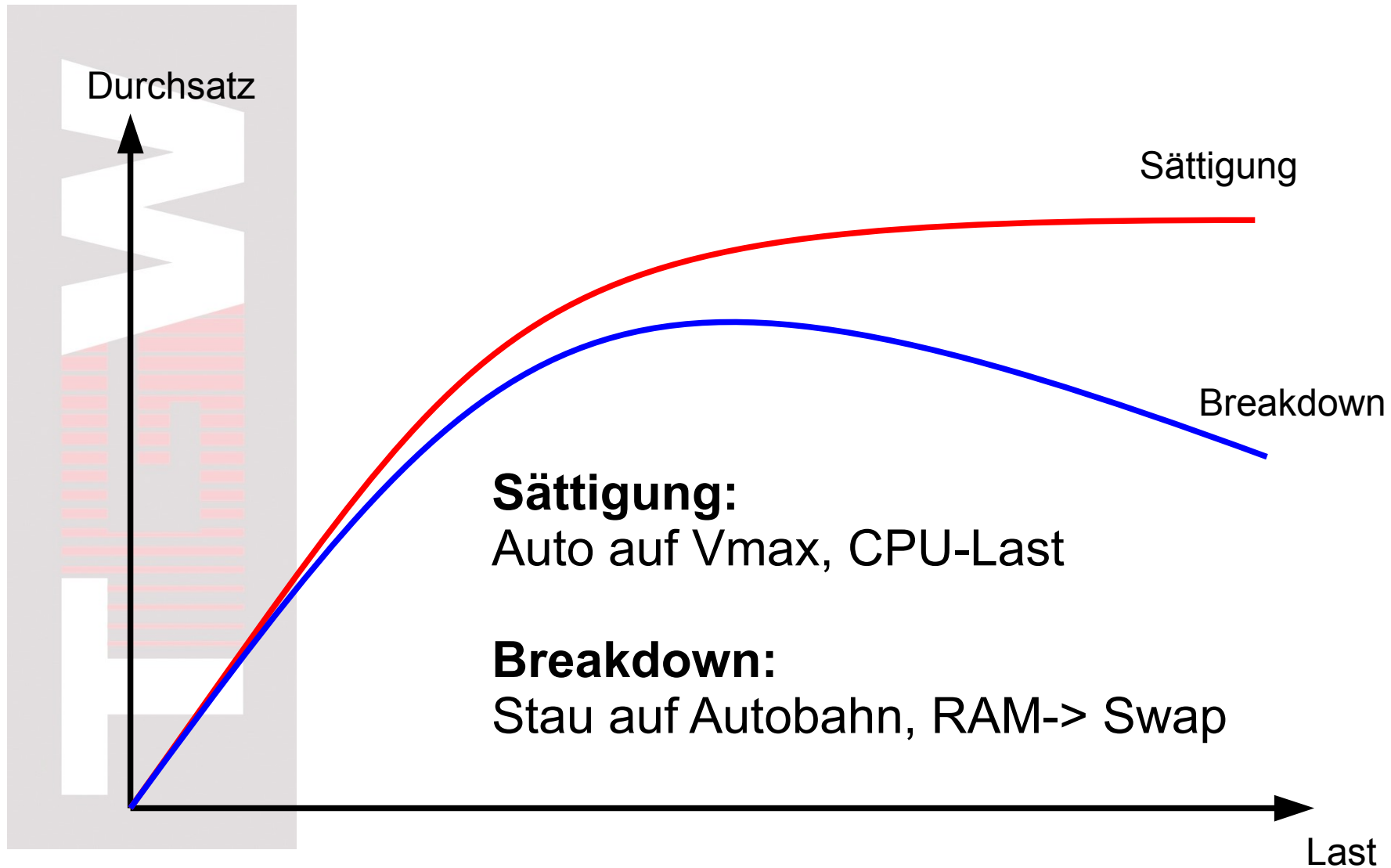
Deterministisch



A large, light gray rectangular graphic on the left side of the slide. It contains a white, stylized, jagged shape resembling a lightning bolt or a stylized 'W' at the top, and a white, stylized 'F' shape at the bottom. A series of horizontal red lines of varying lengths are positioned between the two white shapes, creating a striped effect.

Die Verzögerung im Zusammenhang

Zwei-Klassen-Gesellschaft

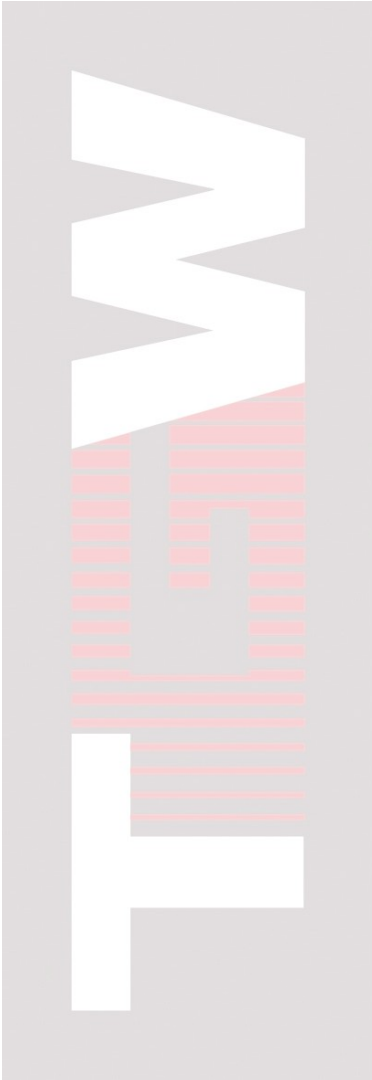




@MartinKlierDBA - Performance is rarely an accident

A large, light grey rectangular logo is positioned on the left side of the slide. It contains the letters 'T', 'F', and 'W' in a bold, white, sans-serif font. The letter 'F' is stylized with red horizontal lines.

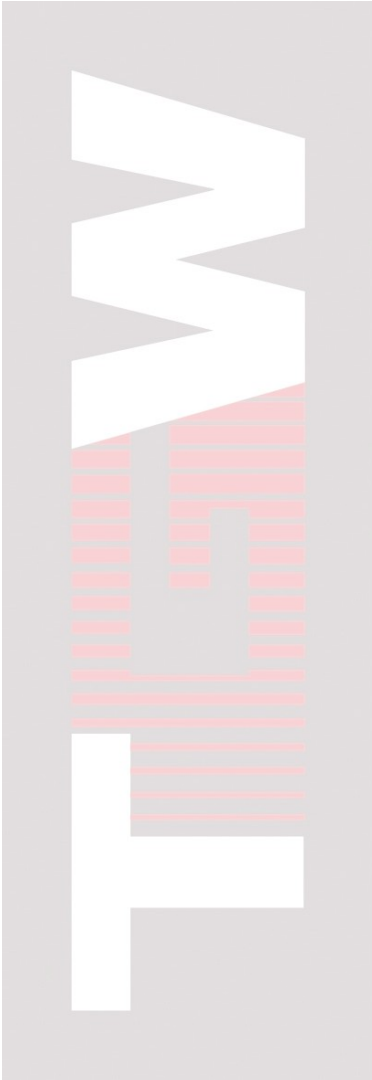
Performance-Tests

A large, light gray rectangular box containing a white stylized 'W' and 'F' logo. The 'W' is at the top and the 'F' is at the bottom, both with a red and white striped pattern on their right sides.

Tu' es!

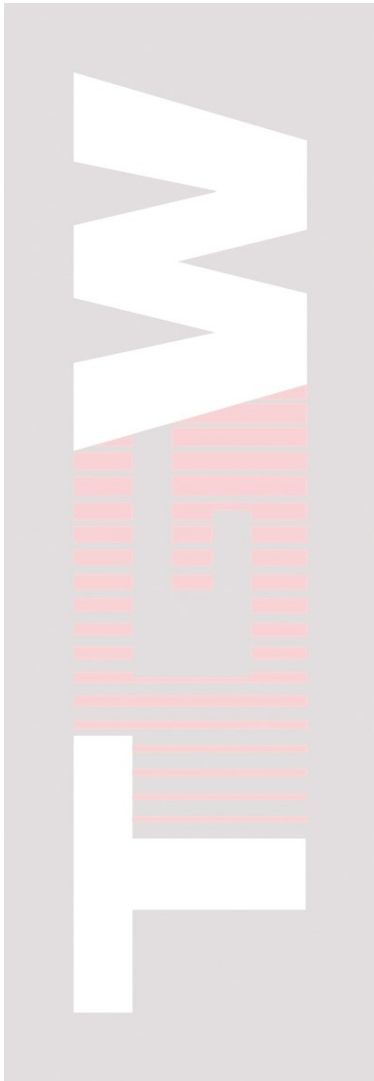
Damit findest Du mehr als wenn Du es
gar nicht versuchst.

Du wirst nie alles finden.

A large, light gray rectangular box containing a stylized white 'W' and 'F' logo. The 'W' is at the top and the 'F' is at the bottom, both in a bold, sans-serif font. A series of horizontal red lines of varying heights are positioned between the 'W' and 'F', creating a barcode-like effect.

Messen

Durchsatz! und Antwortzeit!

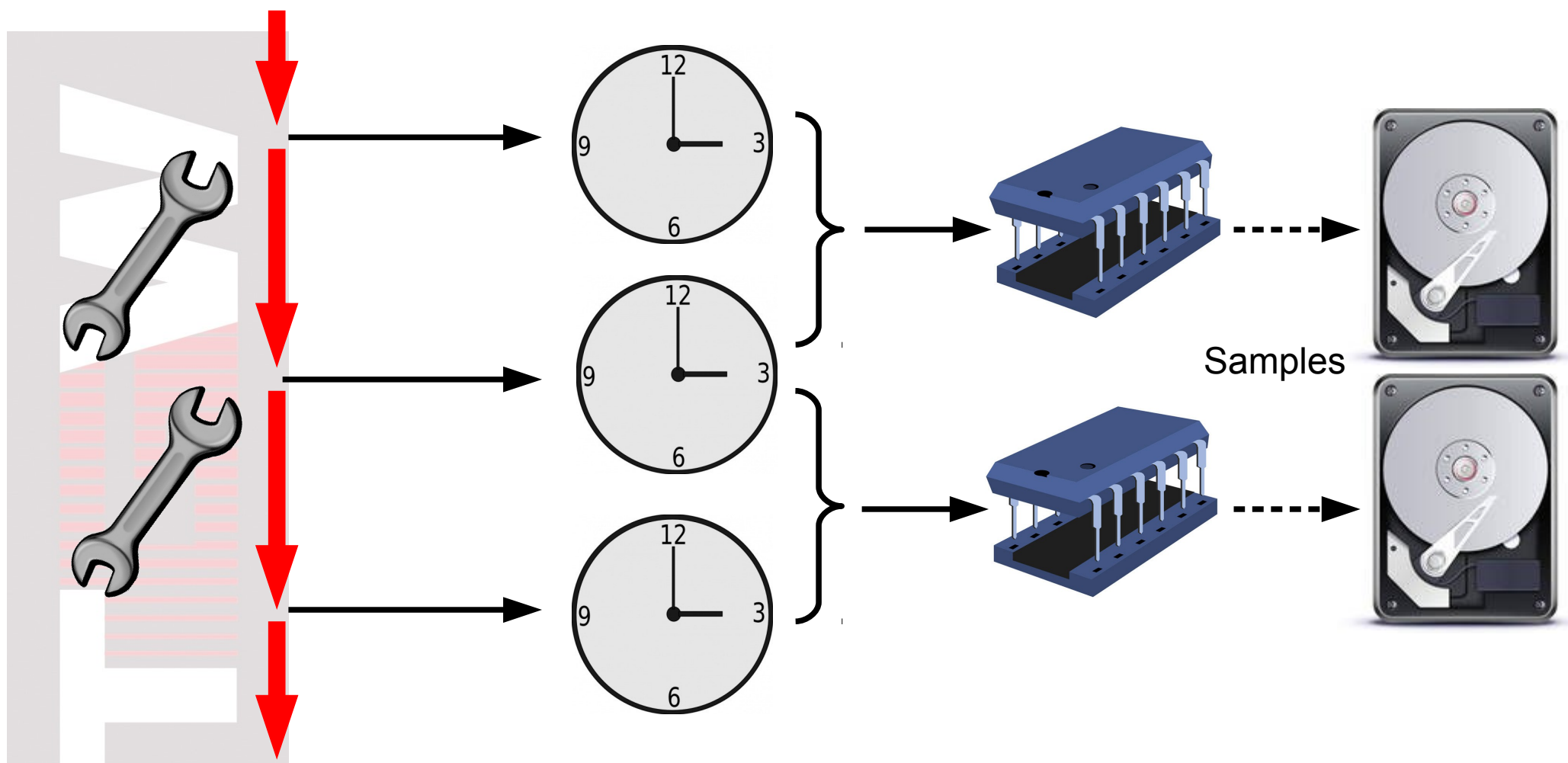


S.M.S.

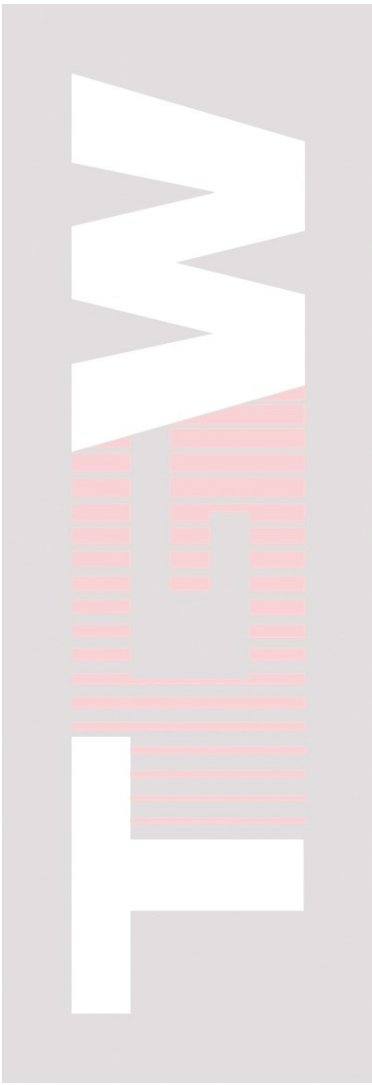
Seiner Majestät Schiff?
Short Message Service?

**Surrogate
Measures
Suck**

Messen



Code Instrumentation

A large, light gray graphic on the left side of the slide. It features a stylized white 'W' at the top and a stylized white 'F' at the bottom. Between the 'W' and 'F' is a series of horizontal red lines of varying lengths, creating a barcode-like effect. The entire graphic is set against a light gray rectangular background.

Performance is a feature

Performance is a feature!



Planen <- Kosten
Einbauen -> Nutzen

=> Gehört detailliert ins Pflichtenheft

Overhead:

- 30%

Durch qualifizierte Instrumentalisierung (=Feedback) wird die Qualität besser.
Das hebt die Mehraufwände um ein Mehrfaches auf!



Vielen Dank für Eure Aufmerksamkeit!

Download: <http://www.usn-it.de>