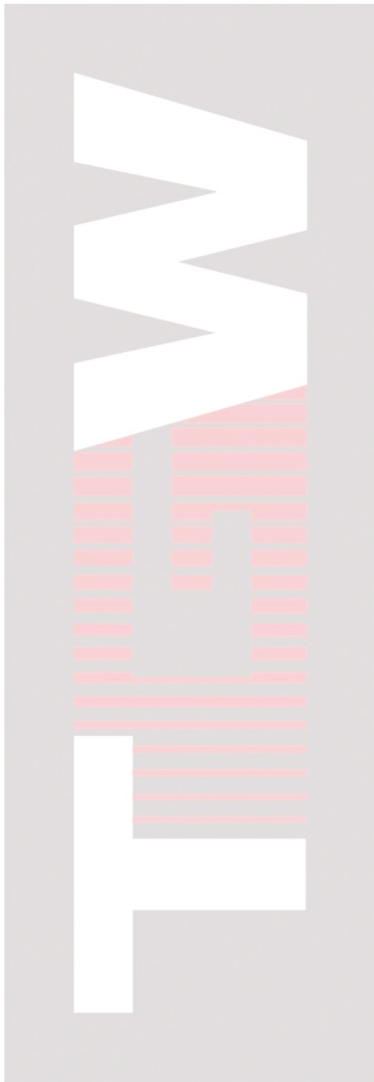


Performance is rarely an accident

Martin Klier
Lead / Senior Database Administrator

TGW Software Services GmbH
Lindenweg 13
92552 Teunz



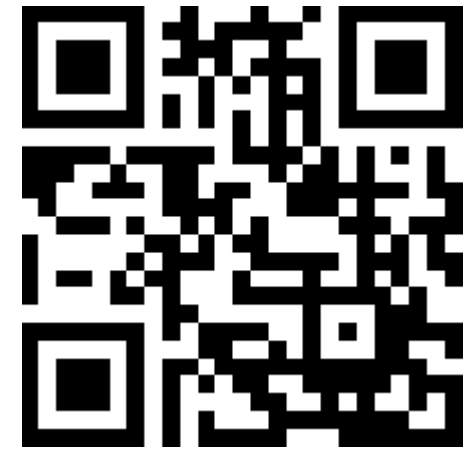
Martin Klier



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



TGW Logistics Group



<http://www.tgw-group.com>

- Führender Anbieter von Logistiklösungen
Gesamtprojekte, IT/Software, SPS, Mechanik
- >1.800 Beschäftigte, >200 Azubis
- Niederlassungen in 14 Ländern weltweit
Hauptsitz Wels, Österreich (nahe Linz)
u.a. Deutschland, UK, USA, Brasilien ...

TGW Logistics Group



Karriere bei TGW



Basiert auf:
„Thinking clearly about performance“
von

Cary Millsap

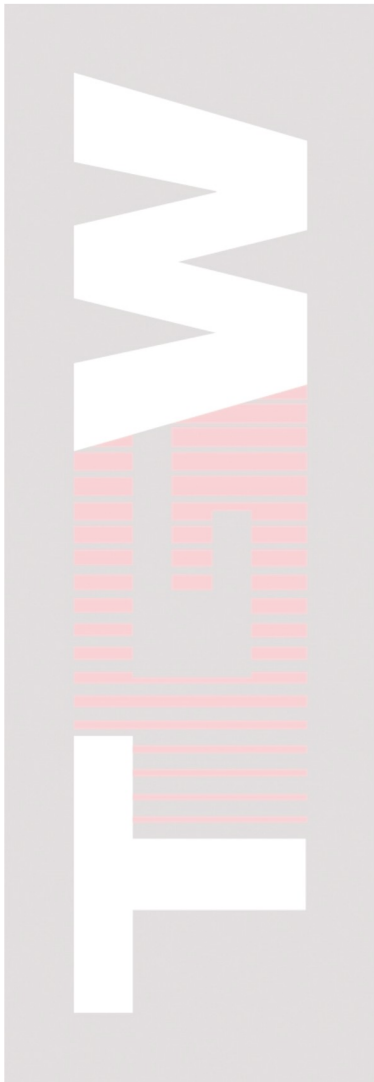


Gründer von

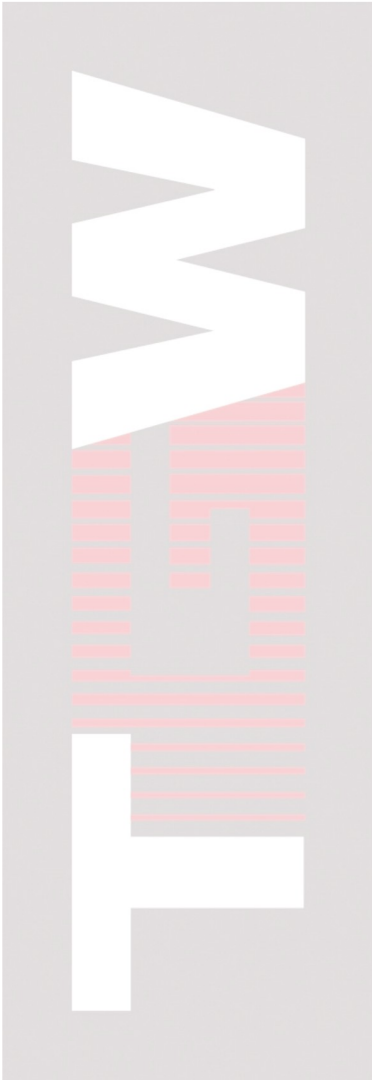
- Hotsos Inc.
- Method-R

with VERY friendly permission....

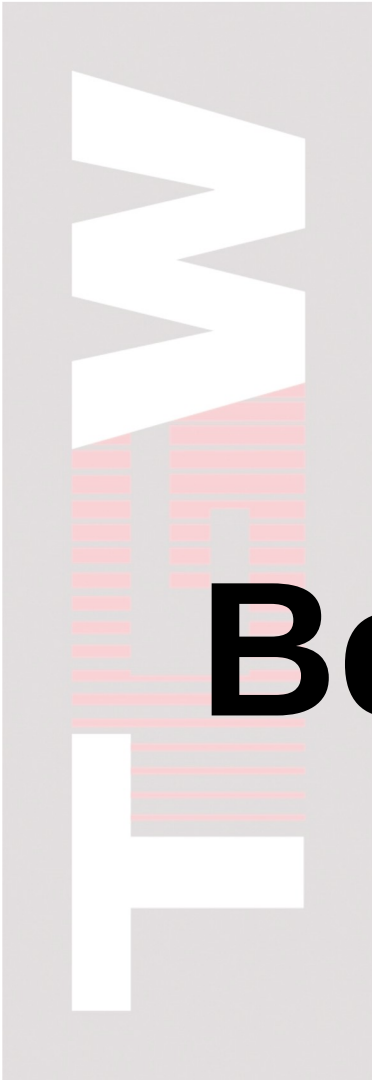
Thank you, Cary!



Excellence

A large, light gray rectangular graphic on the left side of the slide. It contains 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 background.

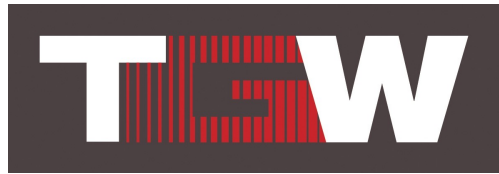
Performance
is rarely an accident

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.

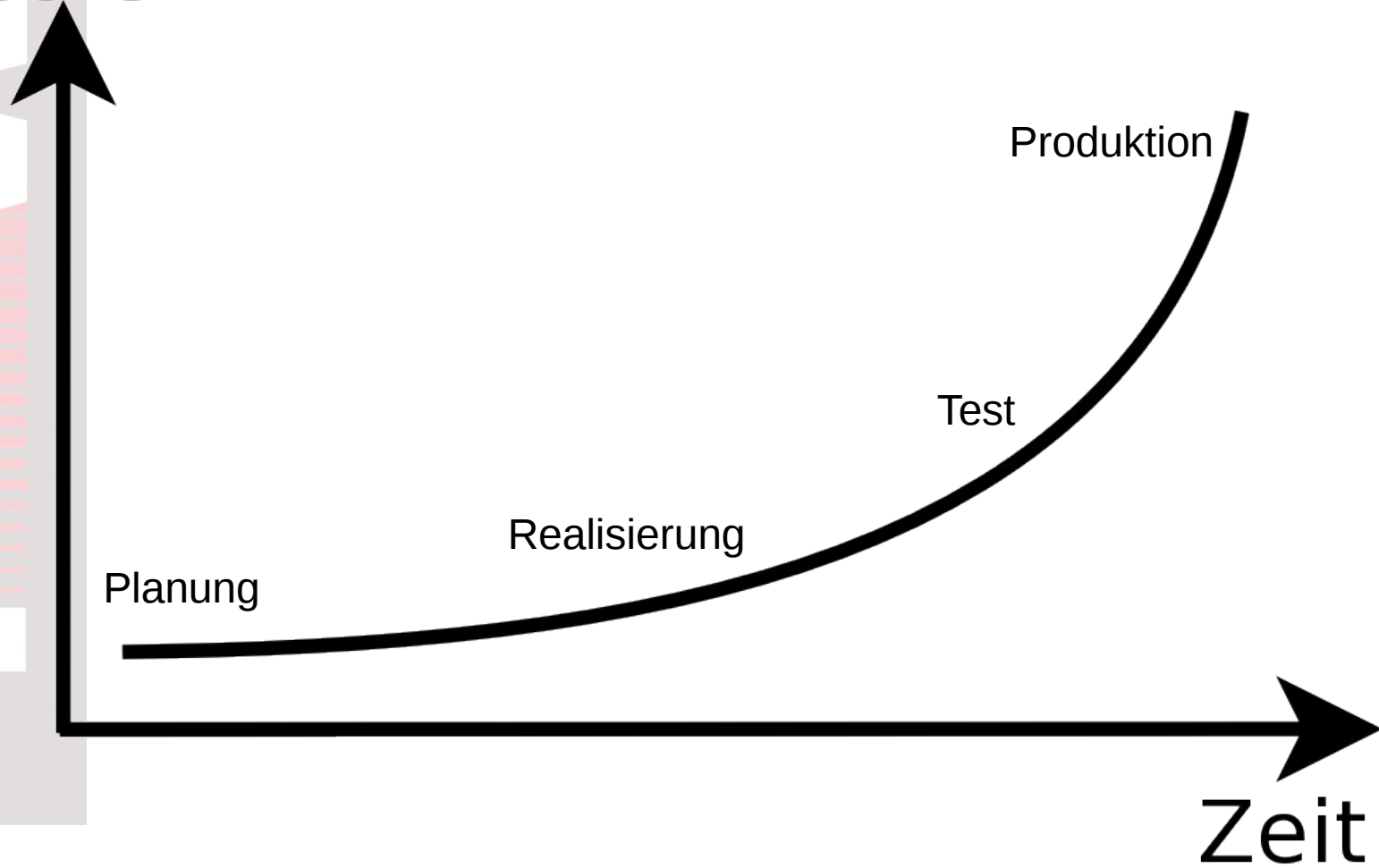
Wissen zählt Beweis zählt mehr

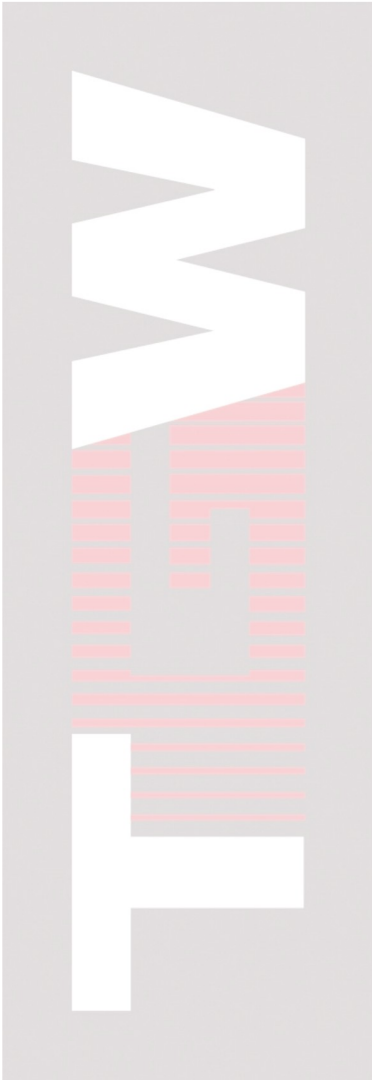
Boehm

Kosten von Änderungen

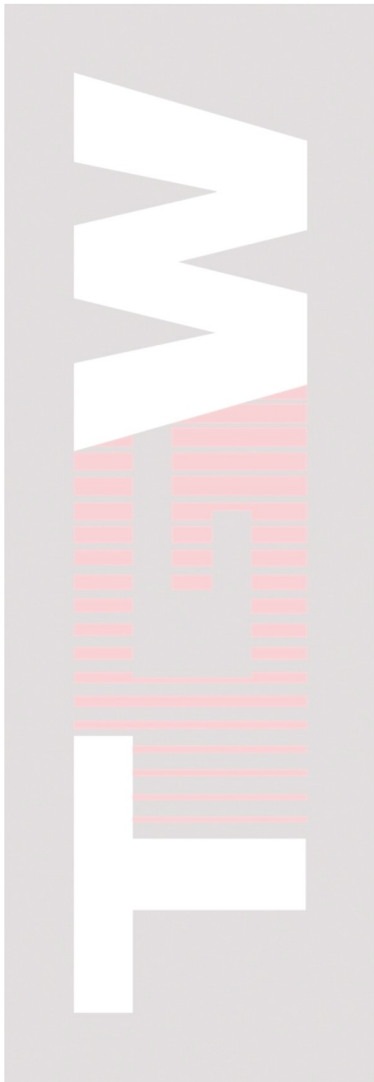


Kosten



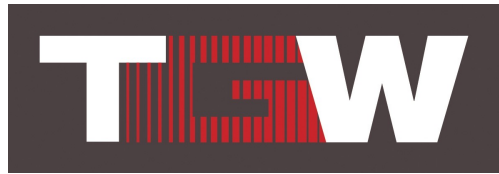
A large, stylized white 'W' graphic on a light grey background, with a red and white striped pattern filling the lower portion of the letter.

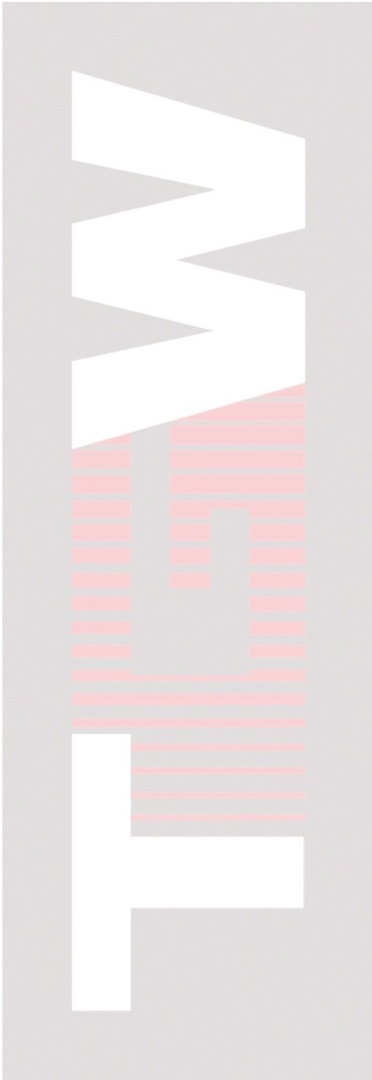
Wir brauchen einen Plan ...



Performance

Performance



A large, stylized white letter 'W' is positioned on the left side of the slide. It is partially overlaid by a grey rectangular area that contains a red and black striped pattern, similar to the 'E' in the TEW logo.

Arbeit pro Zeit

Kilometer pro Stunde, Tonnen pro Monat ...

Zeit je Arbeit

Sekunden pro Buchung, Tage pro Projekt

Durchsatz:

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

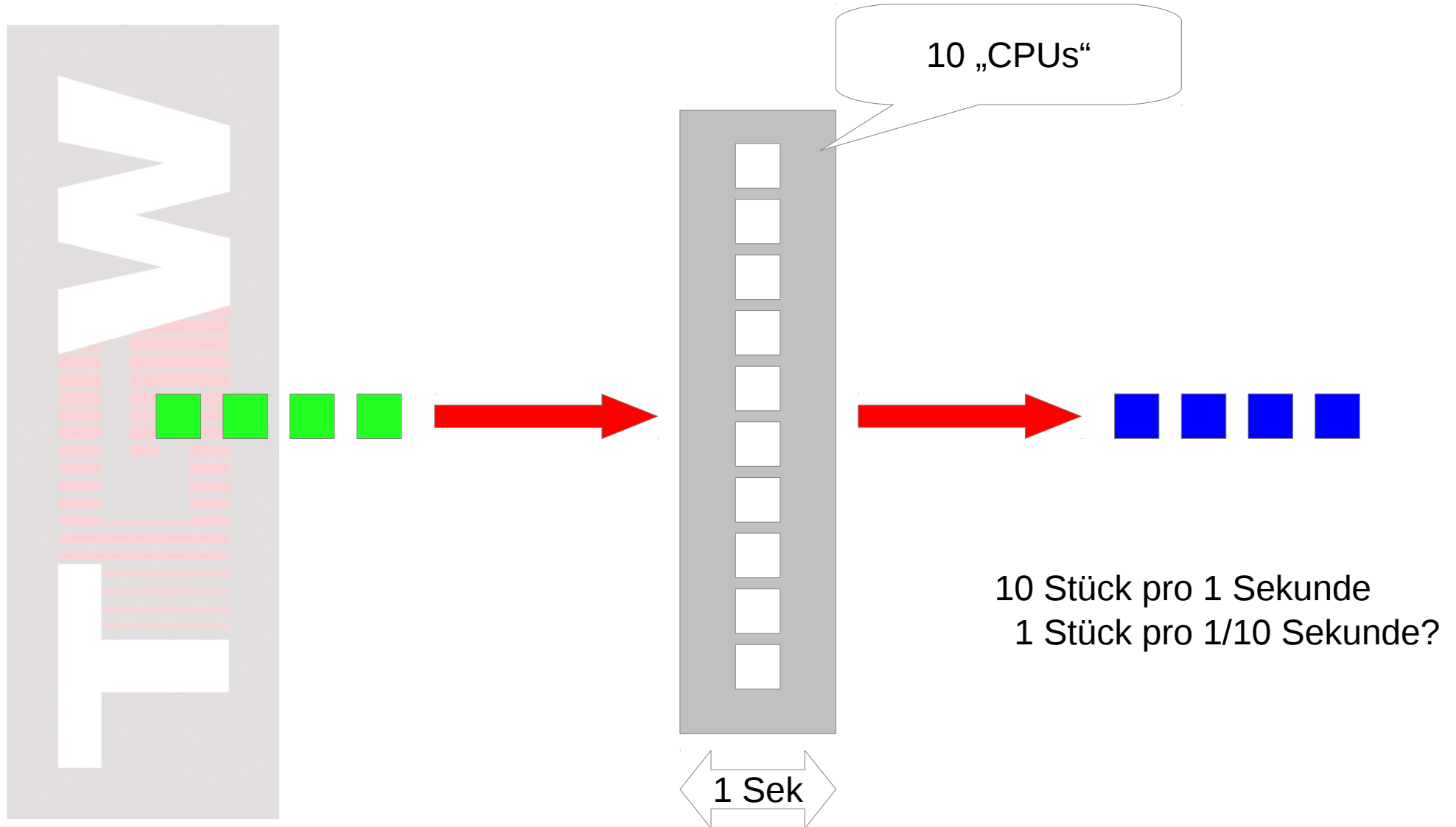
Antwortzeit:

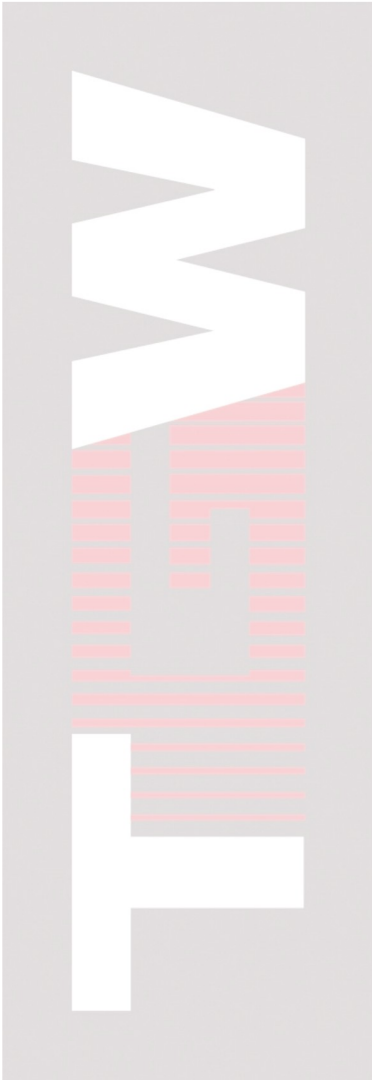
$$R = \frac{\text{time}}{\text{task}}$$

Aber:

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

Kehrwertspiele



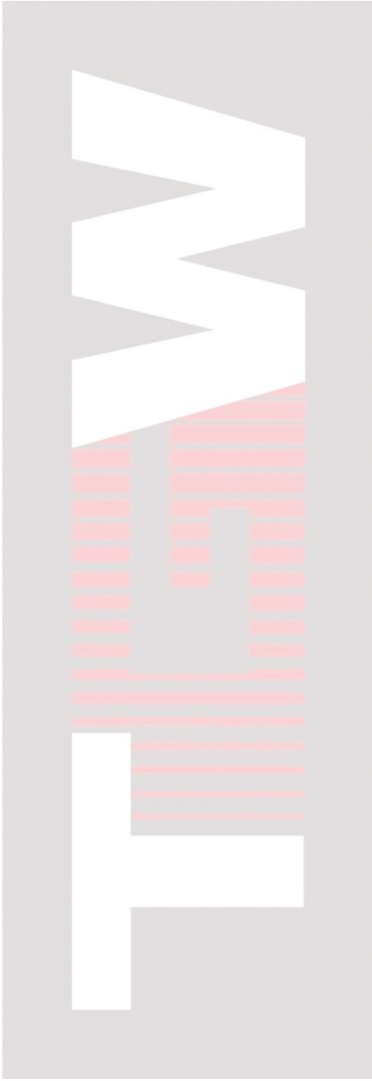
A large, light gray rectangular area containing a stylized white 'W' and 'F' stacked vertically. A red gradient bar, transitioning from light to dark red, is positioned behind the letters, starting from the middle of the 'W' and extending downwards through the 'F'.

Der Mittelwert

Vom Mittelwert

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

0,5; 0,5; 0,5; 0,5; 0,5; 5,5; 0,5; 0,5; 0,5; 0,5;

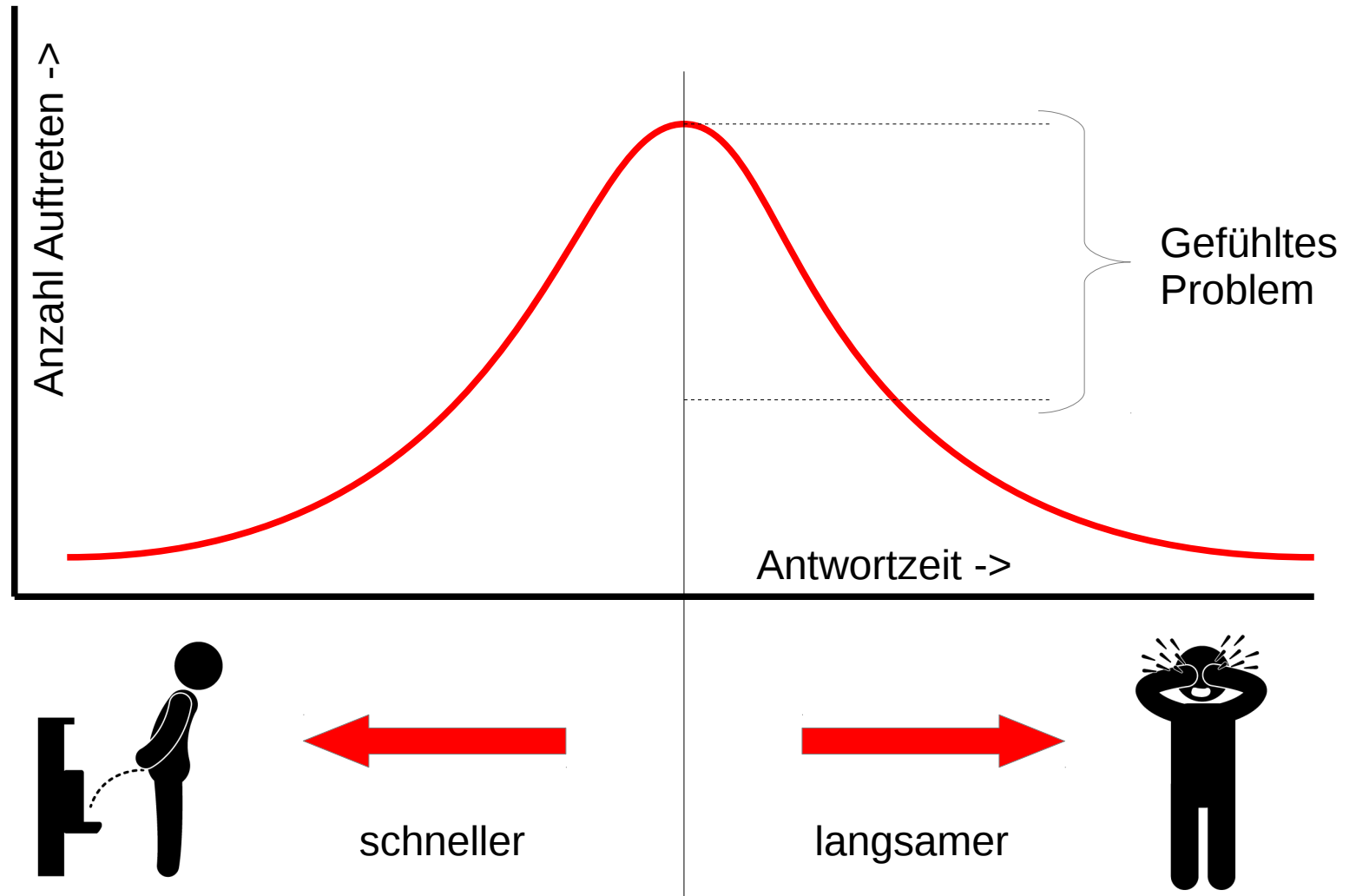
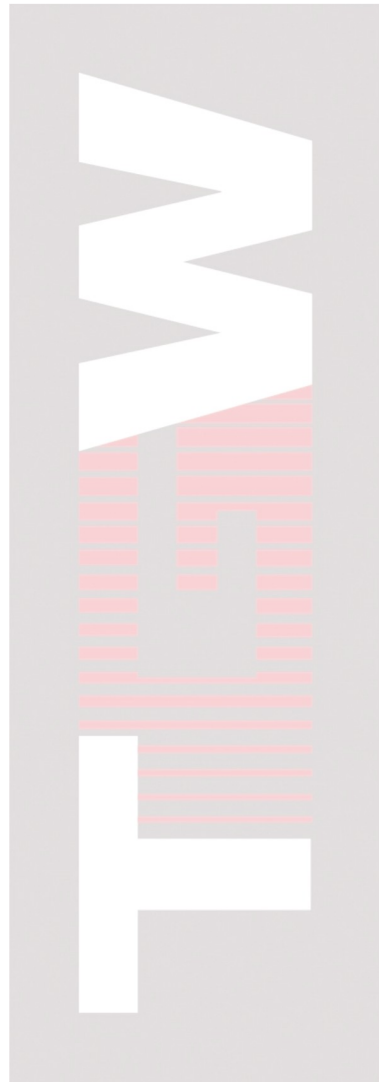
A large, light gray rectangular box containing a white, stylized letter 'W'. The right side of the 'W' is filled with horizontal red stripes, matching the style of the 'E' in the TEW logo.

Vorgabe Antwortzeit: 1s in 99% der Fälle

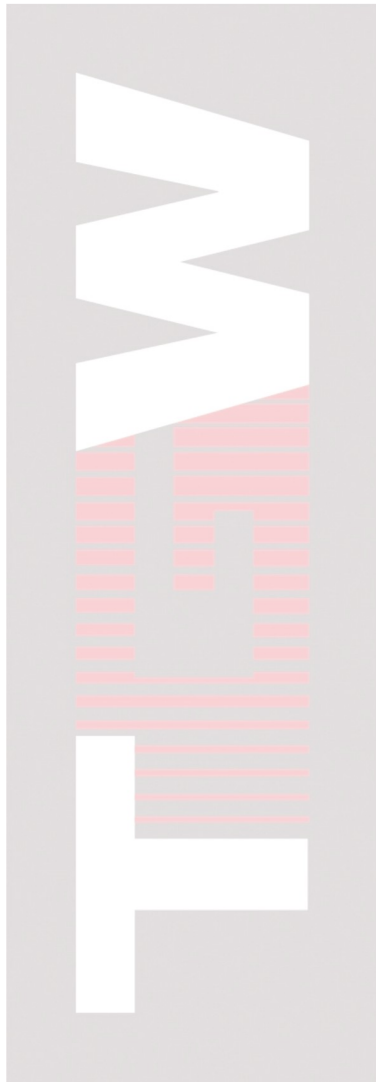
Das ist schon mal etwas....

.... aber

User spüren die Abweichung - und nicht den Mittelwert!



Lösungsweg



Stand heute

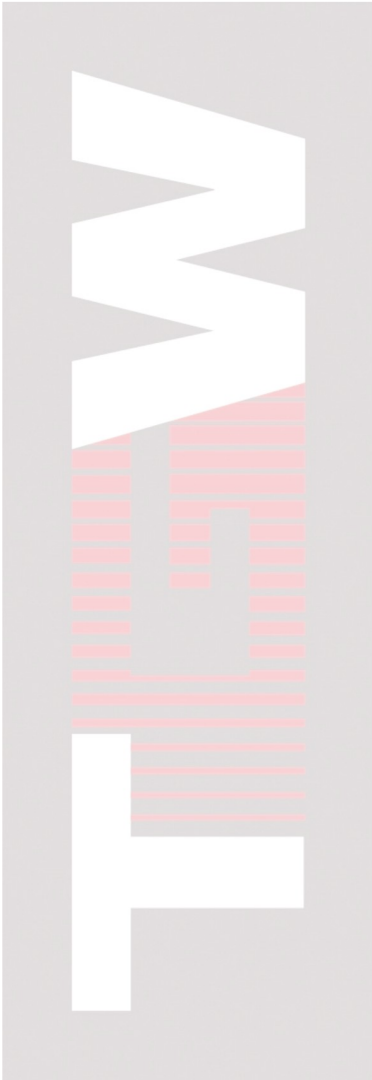
Bemessung

€ € €

Relevanz

Ziel

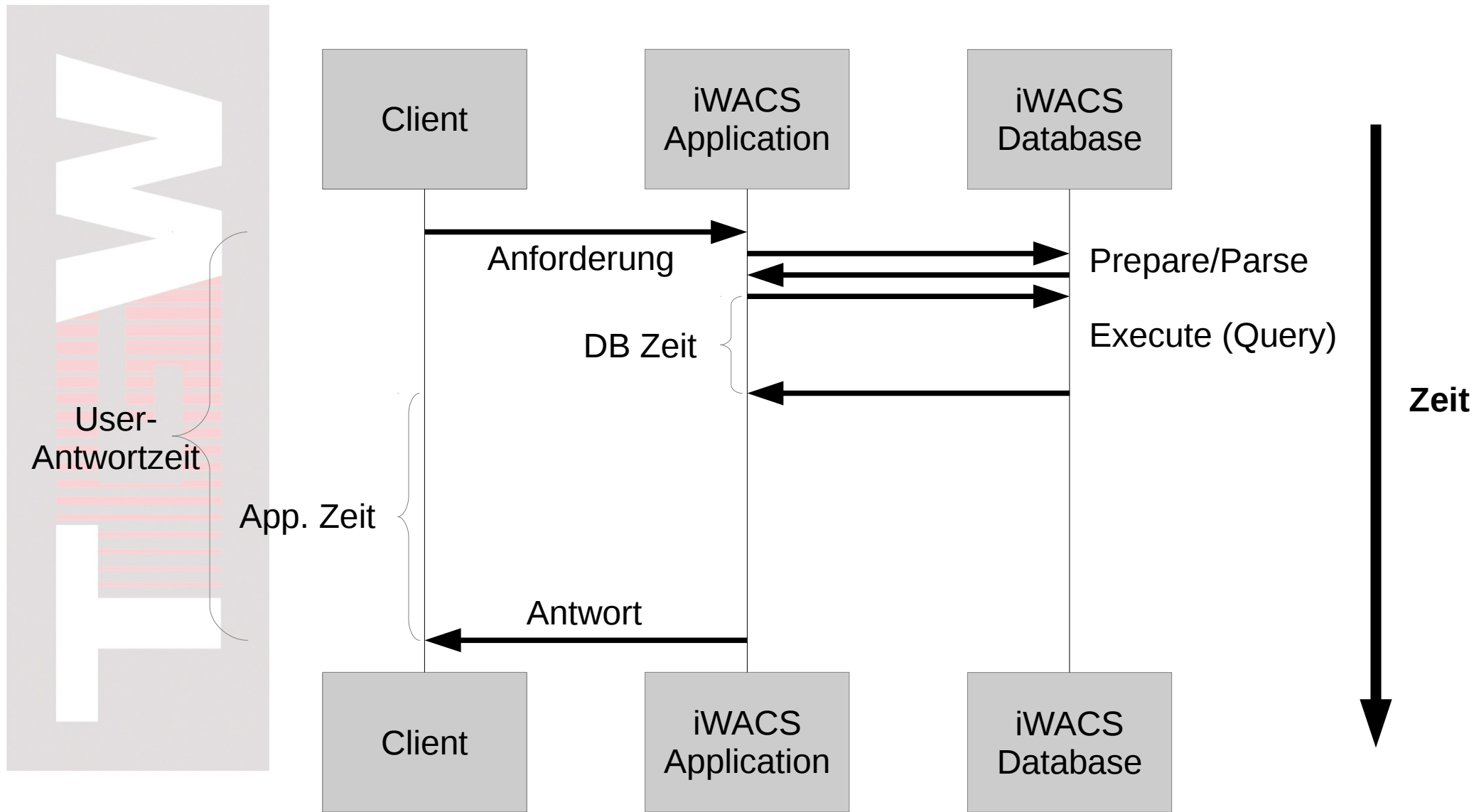
Definition nötig!!

A large, vertical, light grey rectangular graphic is positioned on the left side of the slide. It contains a stylized white 'W' at the top and a stylized white 'F' at the bottom. Between the 'W' and 'F' is a red graphic element consisting of horizontal lines of varying lengths, resembling a stylized 'E' or a barcode. The word

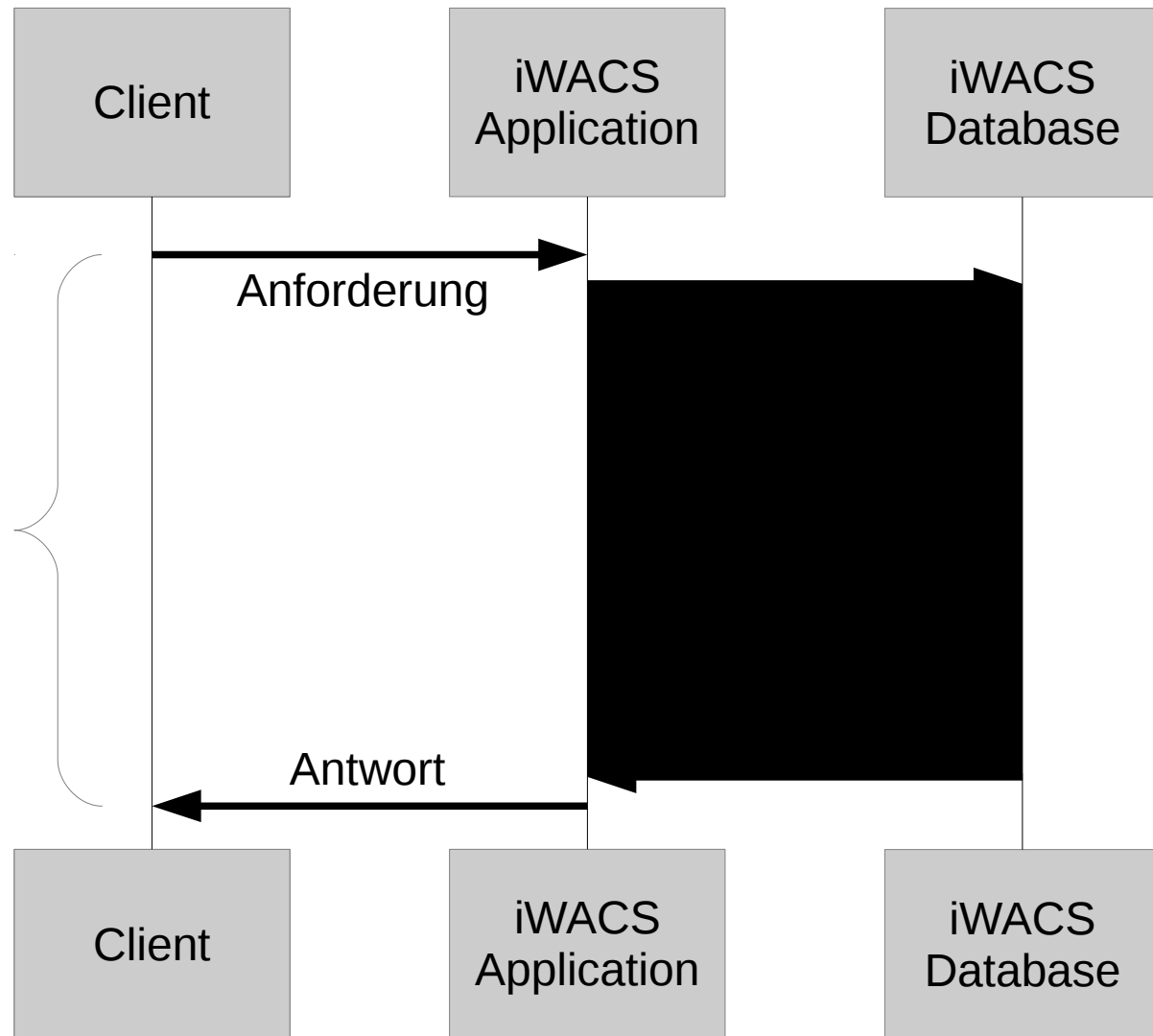
Analyse

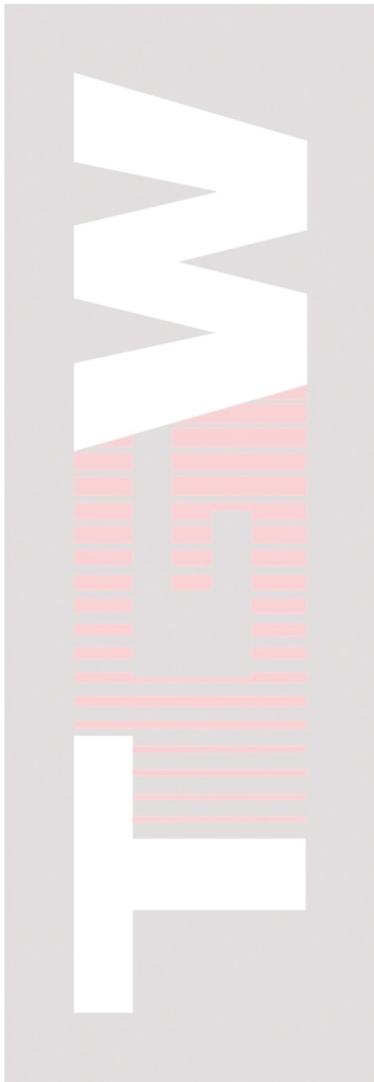
 is centered on the slide in a large, bold, black, sans-serif font.

Sequenzdiagramm (UML)



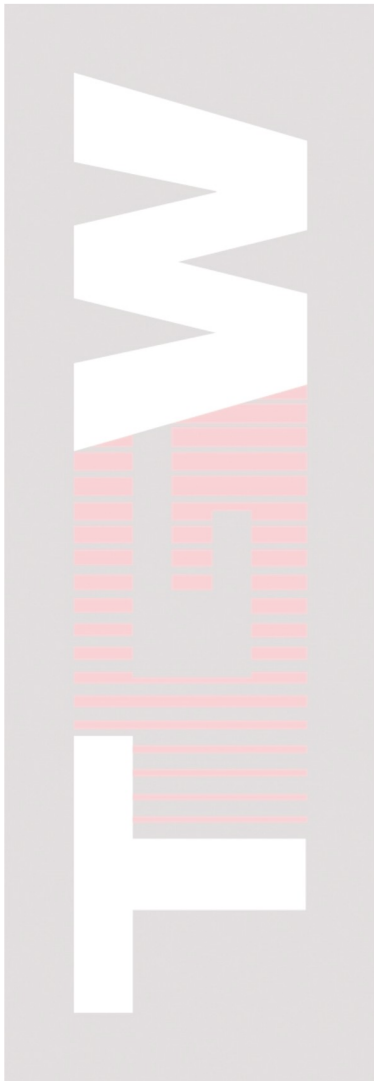
Sequenzdiagramm (UML)





Profiling

Profil



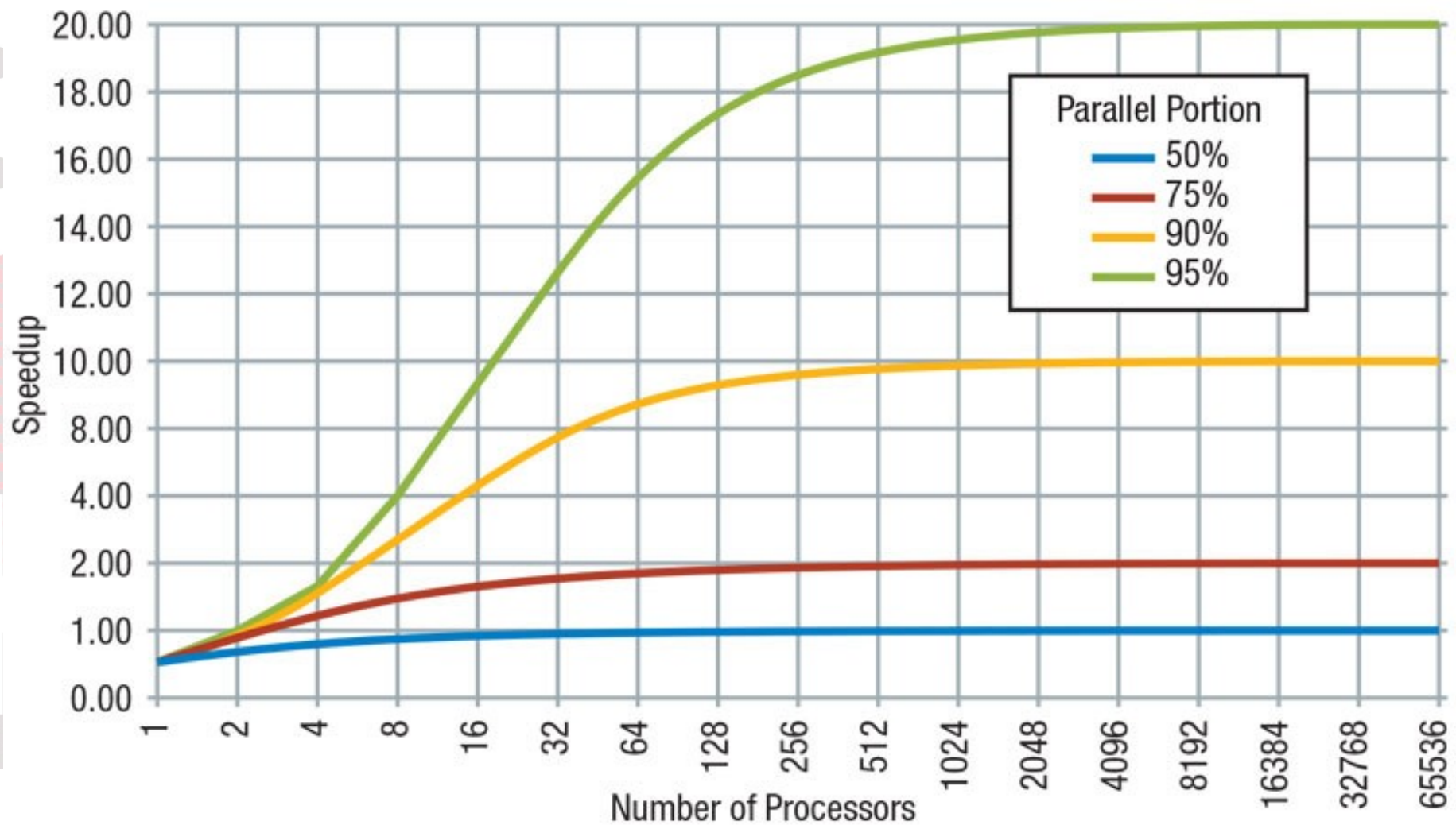
Funktion	R	Anzahl
Dialog-Frontend Seitenaufbau	1700s	35.000
Dialog-Frontend DB-Zugriff	300s	2.500.000
Hintergrund- Prozess XML- Verarbeitung	100s	100.000
Hintergrund- Prozess DB Zugriff	97s	34.000

Zielzeit erreichbar??

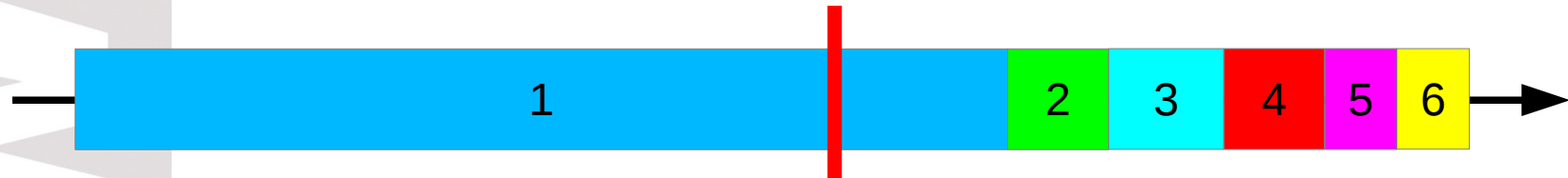
A large, vertical, light gray rectangular block containing a stylized white 'ZF' logo. The 'Z' is formed by three horizontal bars, and the 'F' is formed by two horizontal bars. A red and white striped pattern is visible behind the 'Z' and 'F'.

Amdahlsches Gesetz

Amdahlsches Gesetz - Speziell



Amdahlsches Gesetz - Allgemein



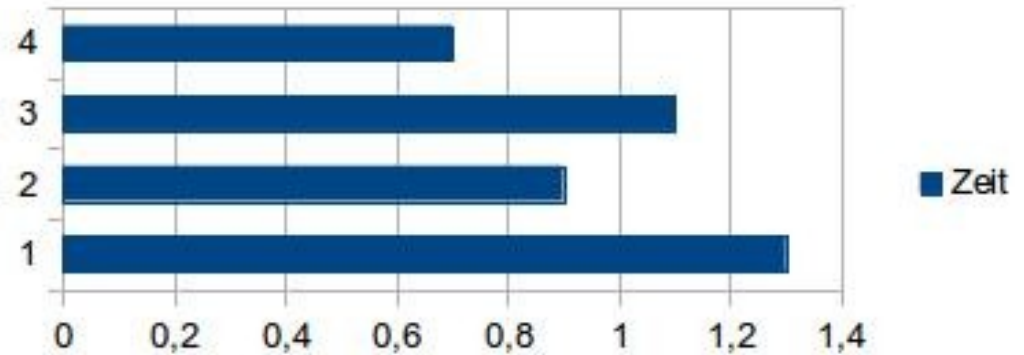
#	Mögl. Verbesserung	Kosten	R	R%
1	34%	€€€€	1.700s	70%
2	12 %	€	300s	13%
3	keine	-	100s	6%
4	4 %	€	97s	4%
5	0,1%	€€€€	58s	3%
6	1,6%	€	48s	2%
...	...	...	...	...

Ausreißer (Skew)

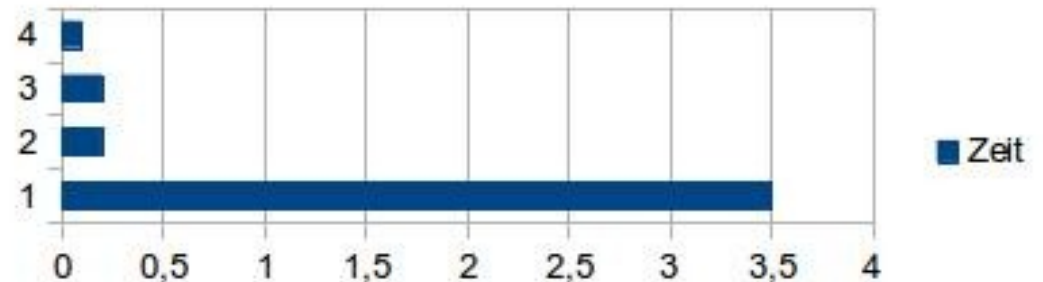
Ausreißer einfangen

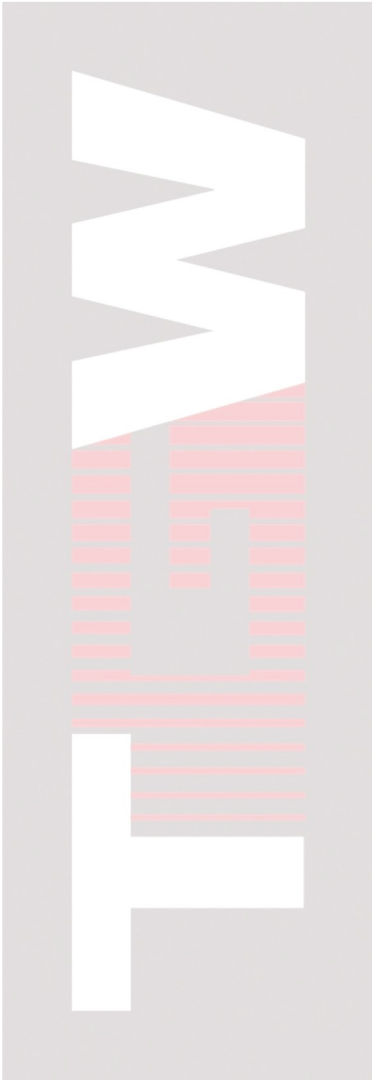
4 calls = 4 sek
2 calls = ? sek

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

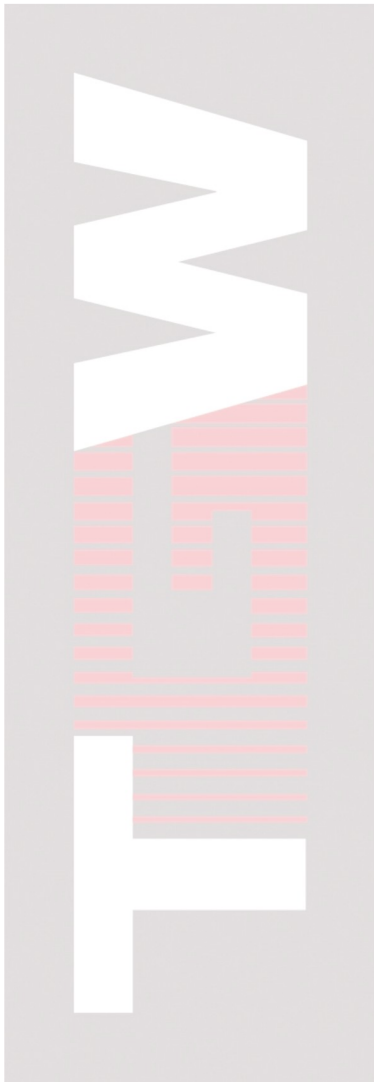


A large, light gray rectangular box containing a stylized white 'W' and 'F' logo. The 'W' is at the top, and the 'F' is at the bottom. A red and white striped pattern is visible between the two letters.

Risiko- Minimierung

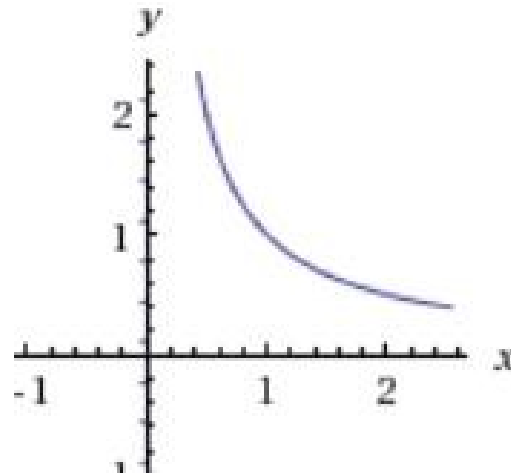
Einschub: Risikominimierung bei Eingriffen

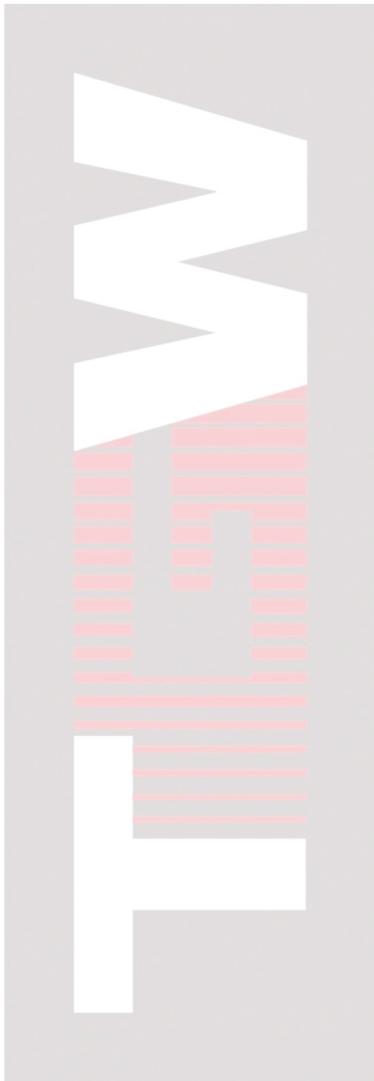
Wenn alle außer Dir zufrieden sind
bringe Deinen Stall lokal in Ordnung
bevor Du globale „Problemlösungen“ einbaust
die alle anderen auch beeinträchtigen



Effizienz

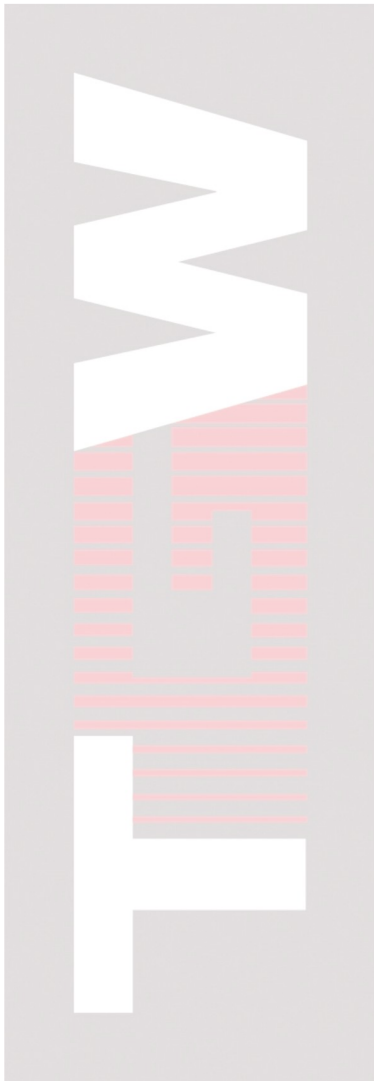
$$\textit{Effizienz} = \frac{1}{\textit{Verschwendung}}$$





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

-- Jawaharlal Nehru

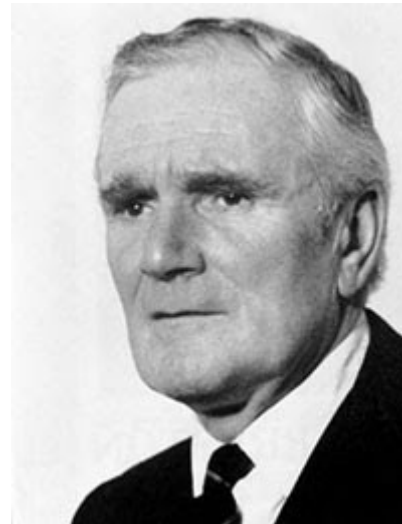


Last

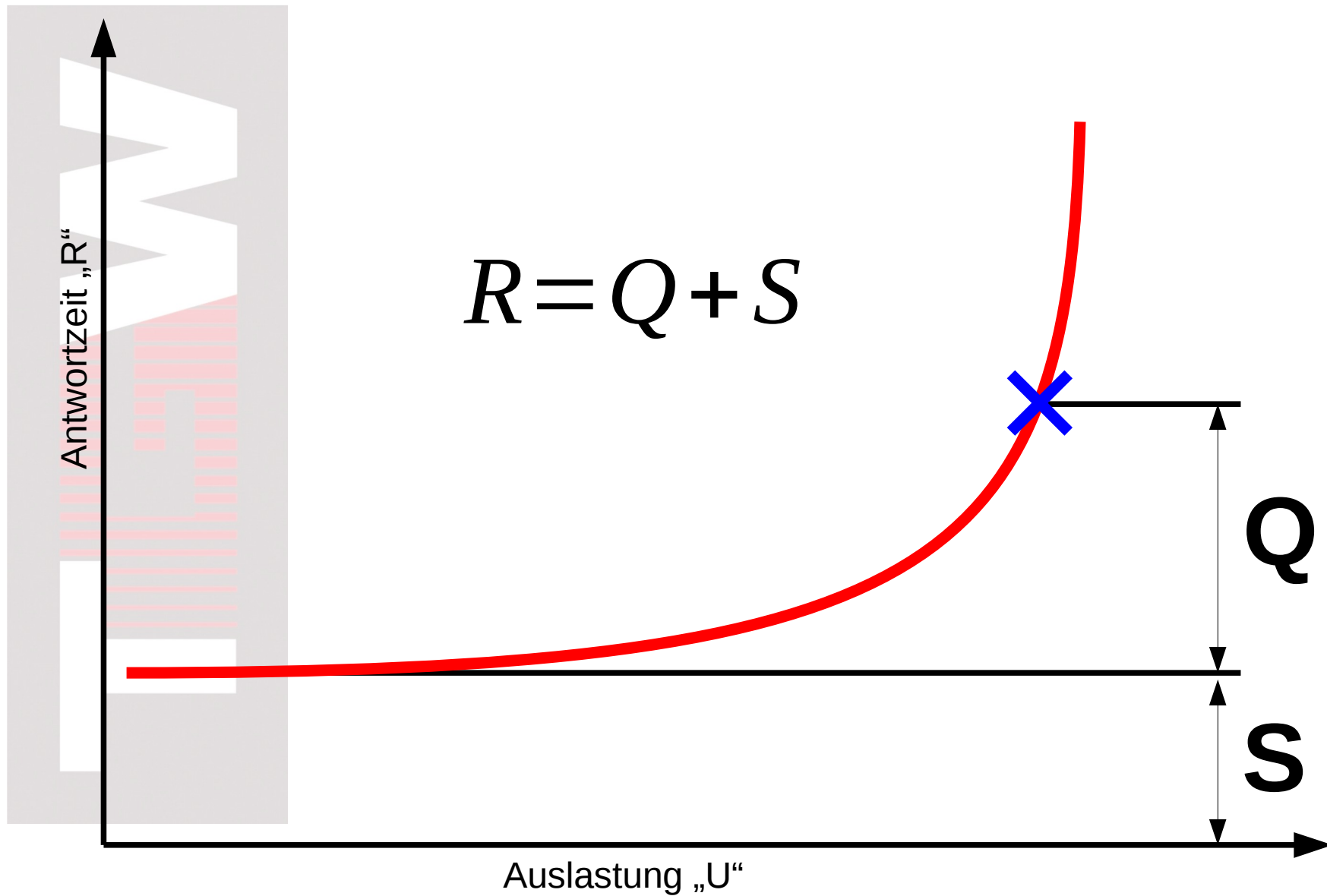
Verzögerung durch „Q“

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	0s-120s	1	Q
Burger holen	10s	2	S
...	...	...	...

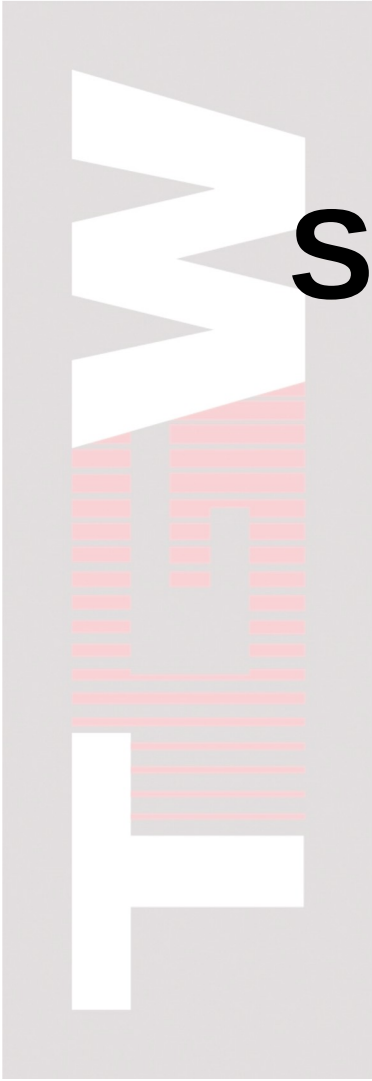
„Q“ - Diagramm



„Q“ - Diagramm



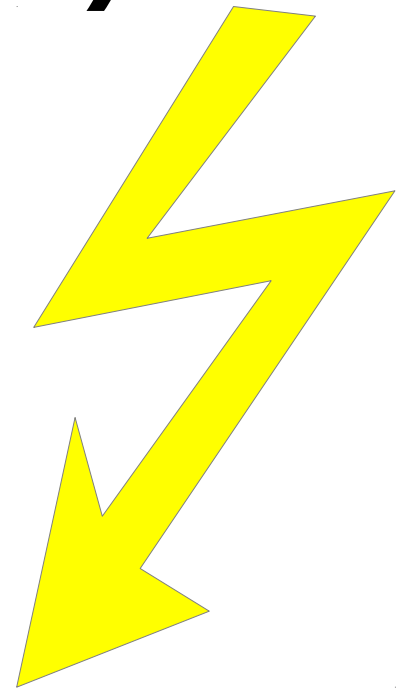
Das Knie oder Der Knick

A large, stylized white letter 'Z' on a grey background, with a red and white striped pattern on the right side.

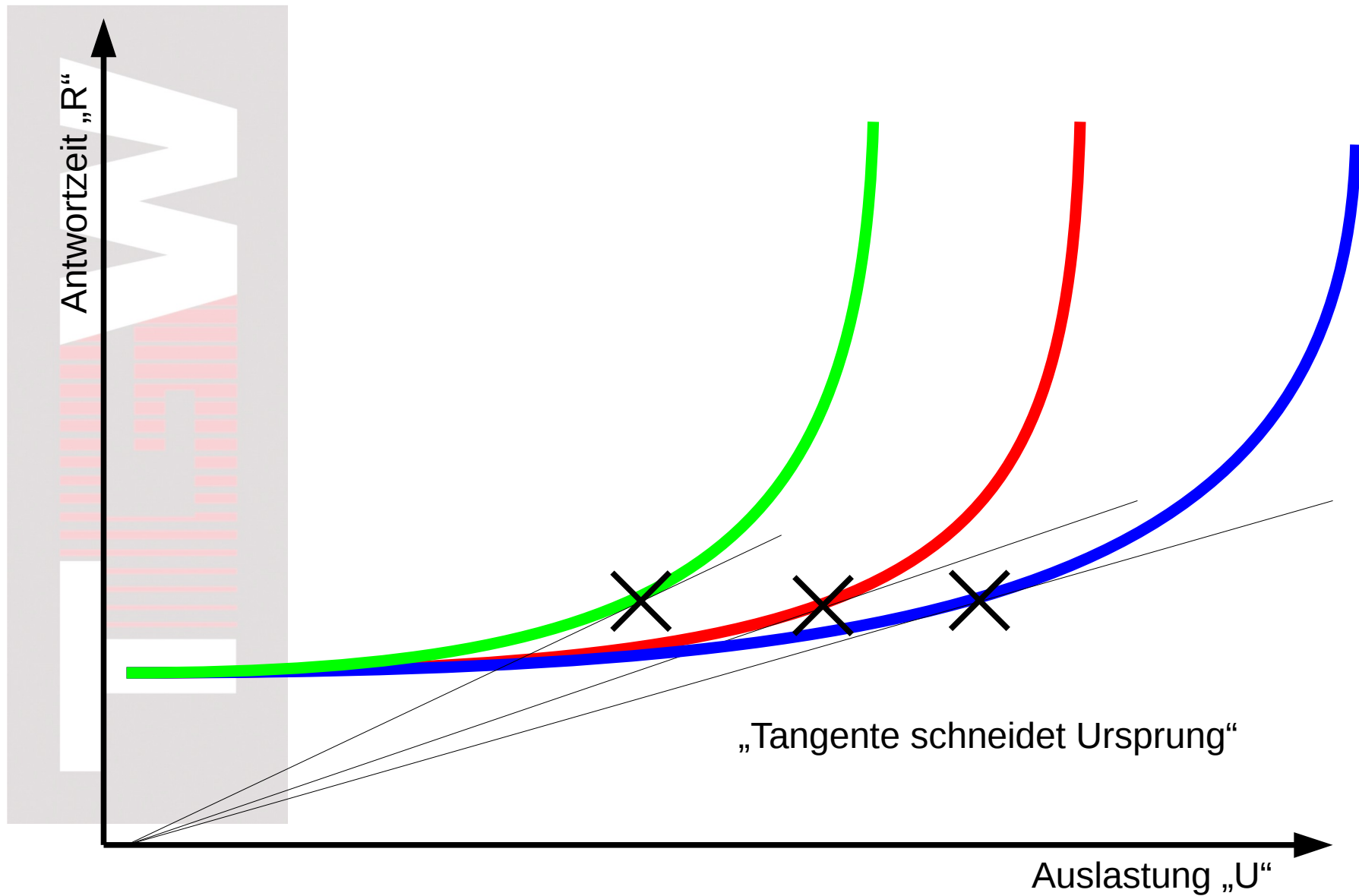
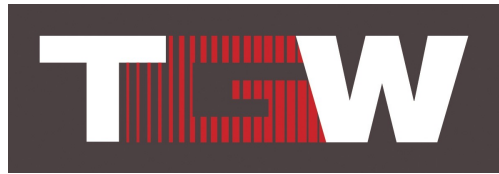
Schnelle Antwortzeit (R)

vs.

Hoher Durchsatz



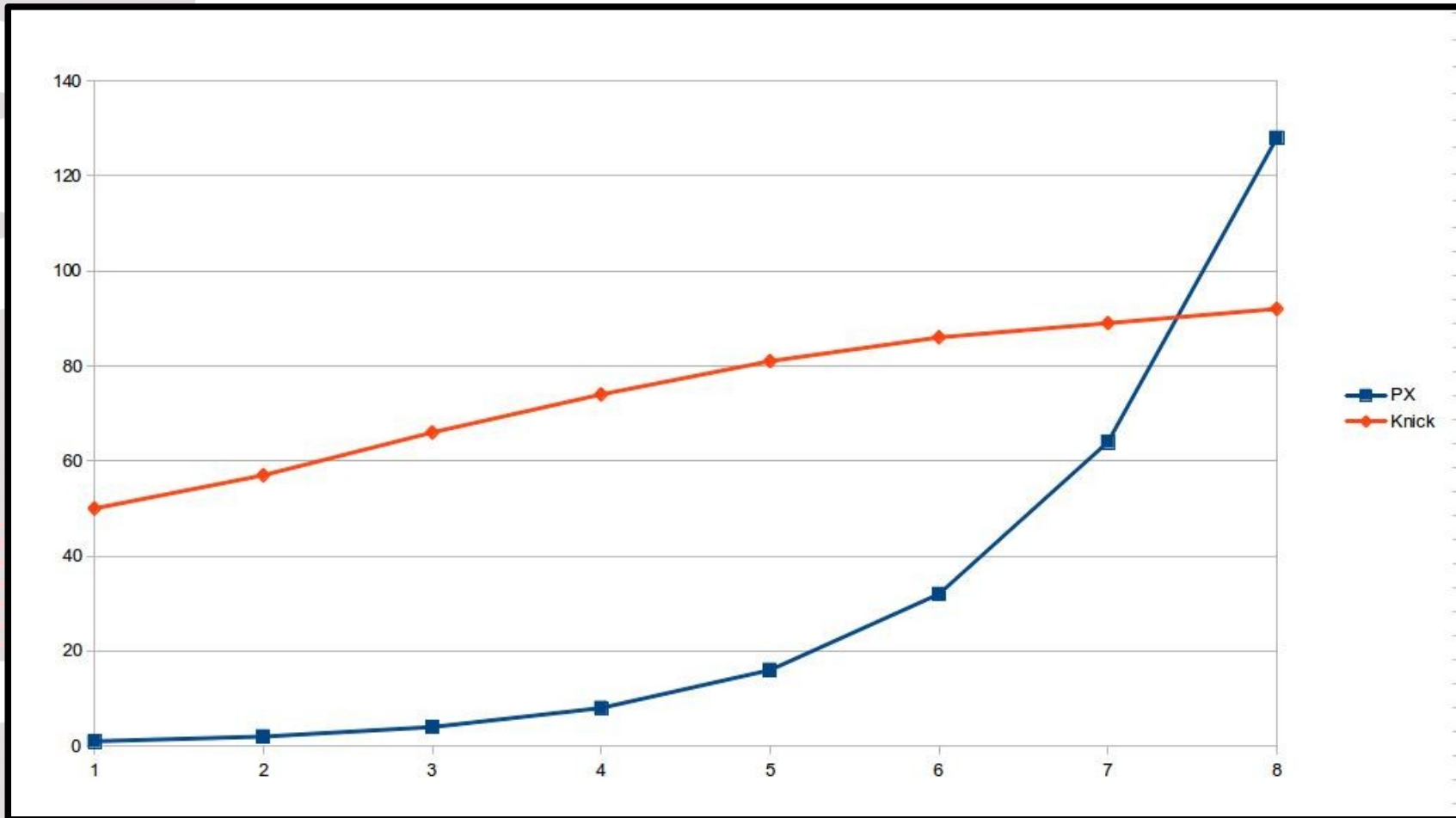
Der Knick



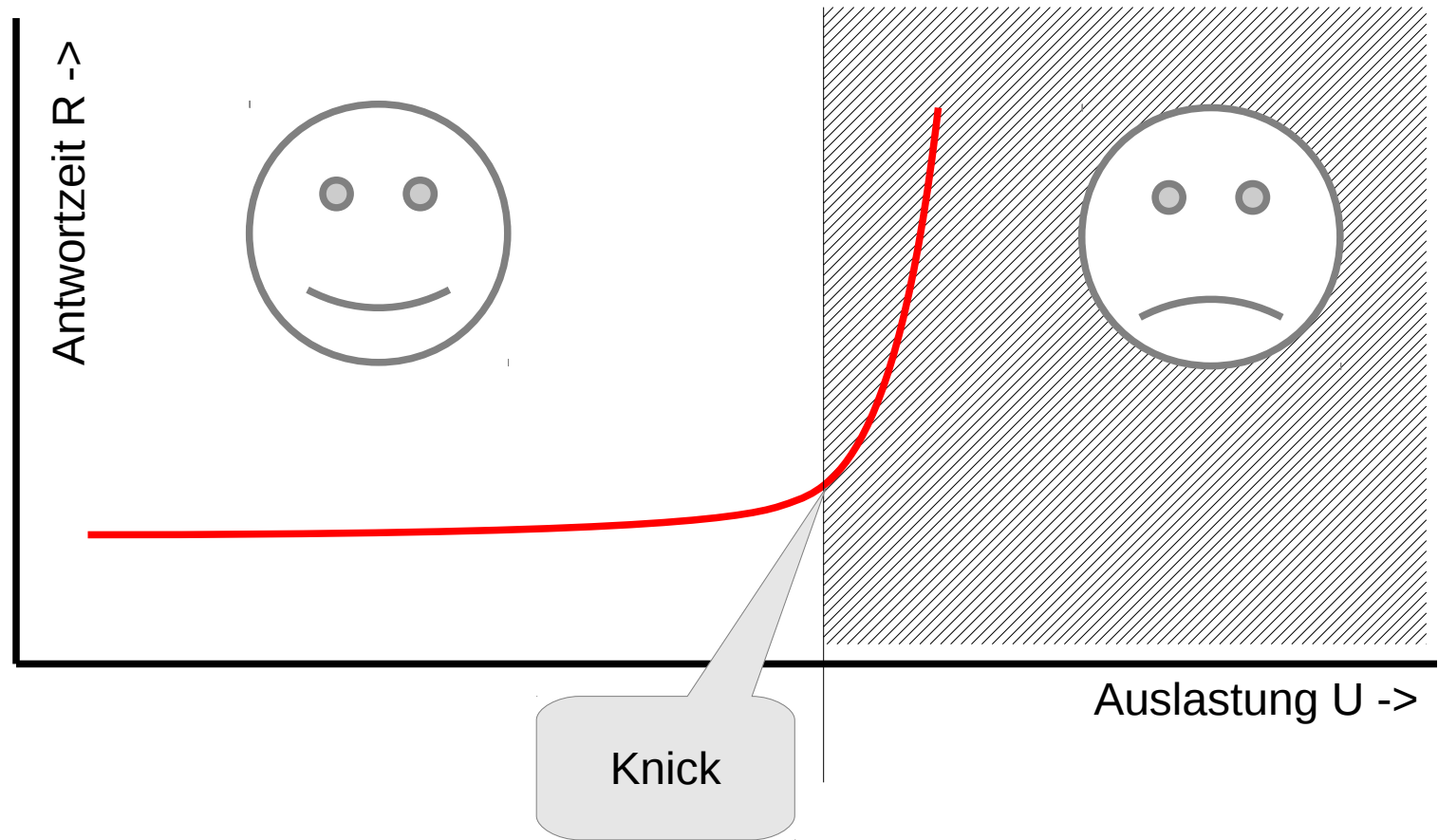
Skalierung: Knick folgt verzögert

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



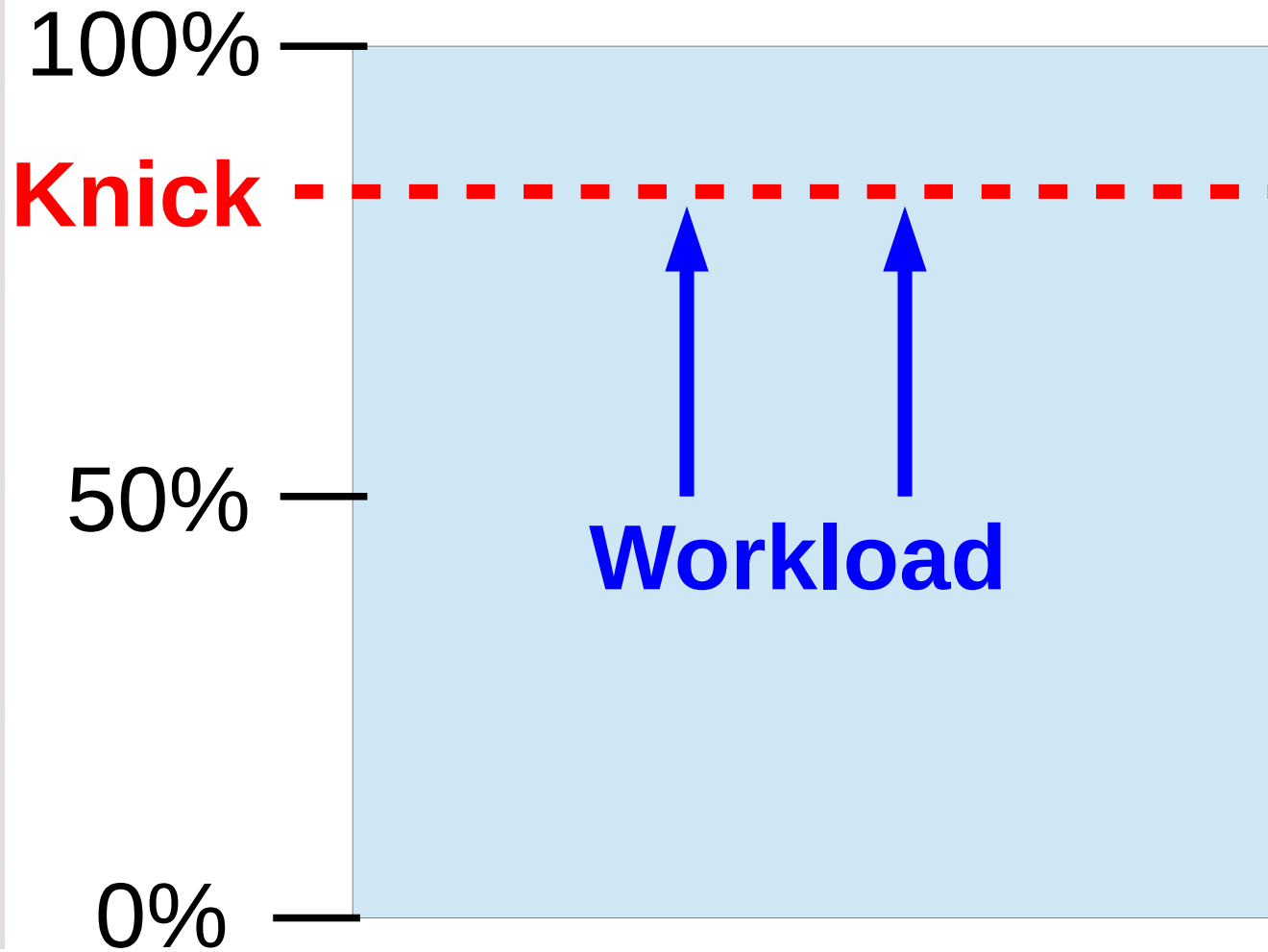
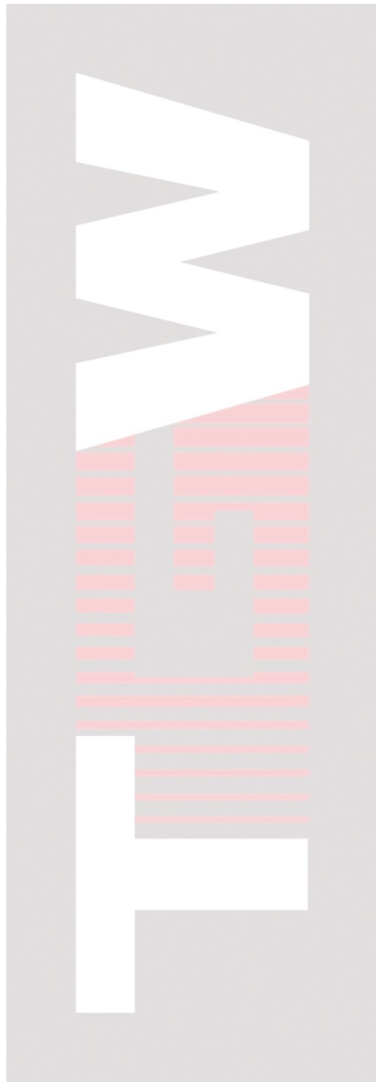
Relevanz des Knicks



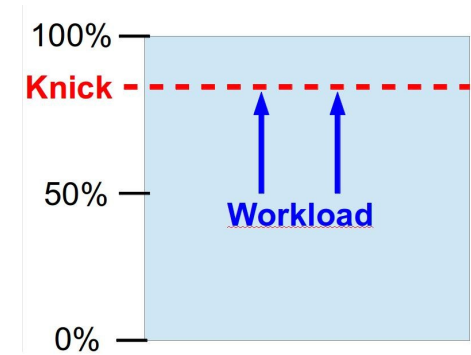
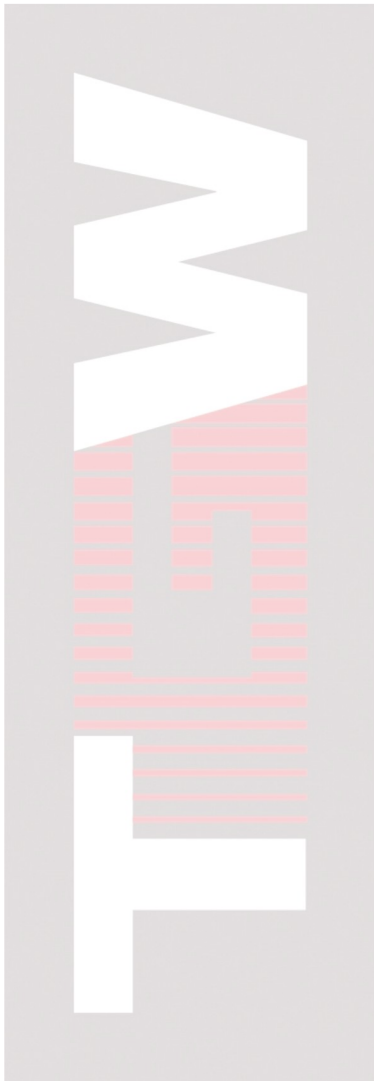
A large, light grey graphic on the left side of the slide, featuring a stylized 'W' and 'F' shape. The 'W' is white and the 'F' is white, both set against a background of red horizontal bars.

Kapazitätsplanung

Kapazitätsplanung



Kapazitätsplanung



Kapazitätsplanung:

Wie groß muss das System sein?

Last-Management:

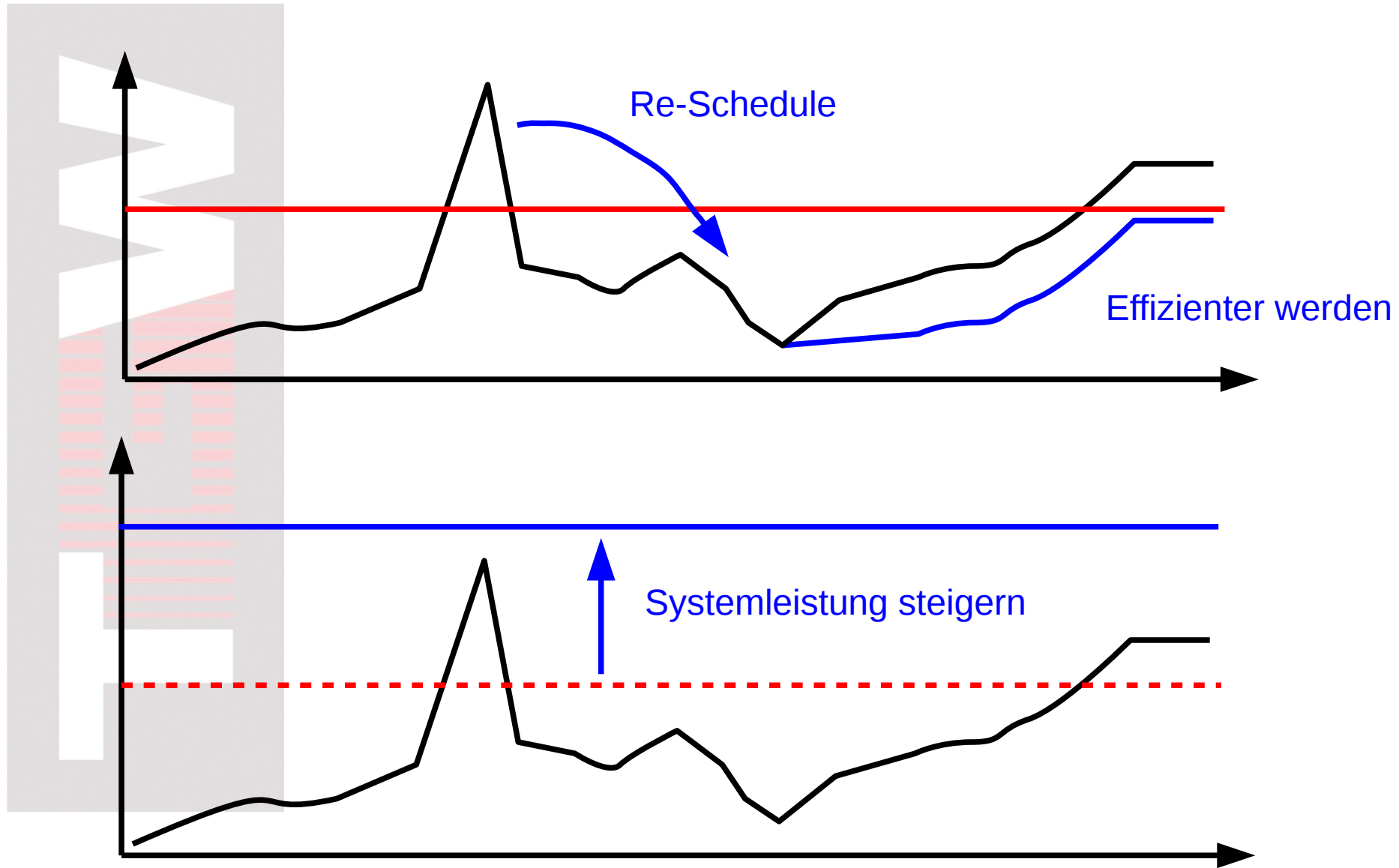
Wie klein kann das System sein?

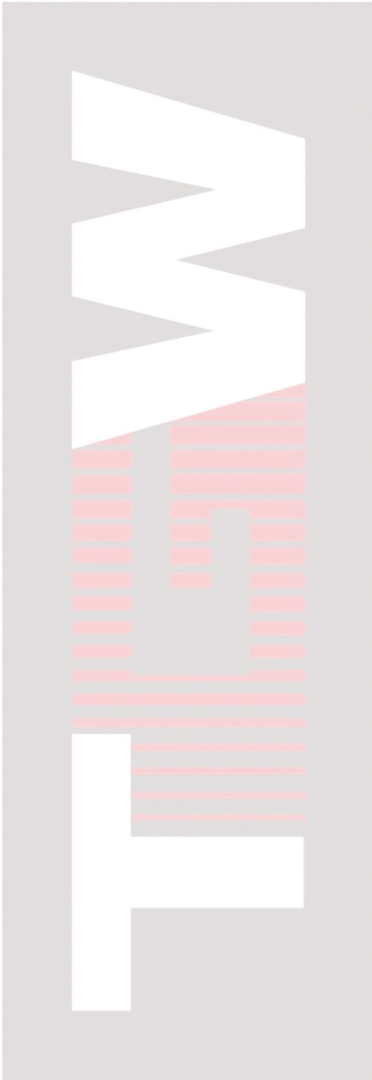
=> Der Knick ist unsere „Rote Linie“

A vertical decorative graphic on the left side of the slide. It consists of a grey rectangle containing a white stylized 'W' shape. Overlaid on this is a red and white striped pattern that tapers towards the top, resembling a peak or a stylized 'E'.

Reduzieren von Peaks

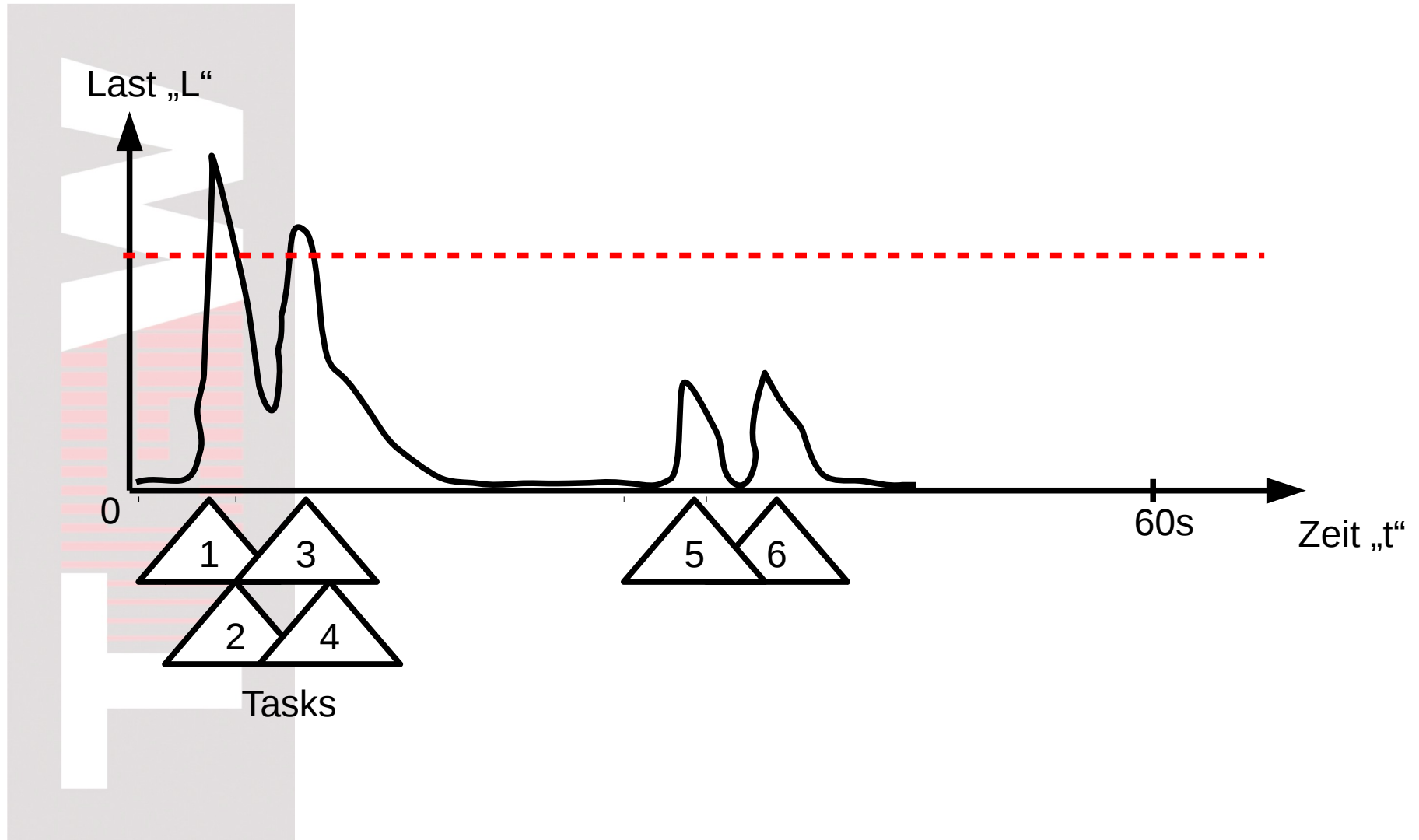
Peaks



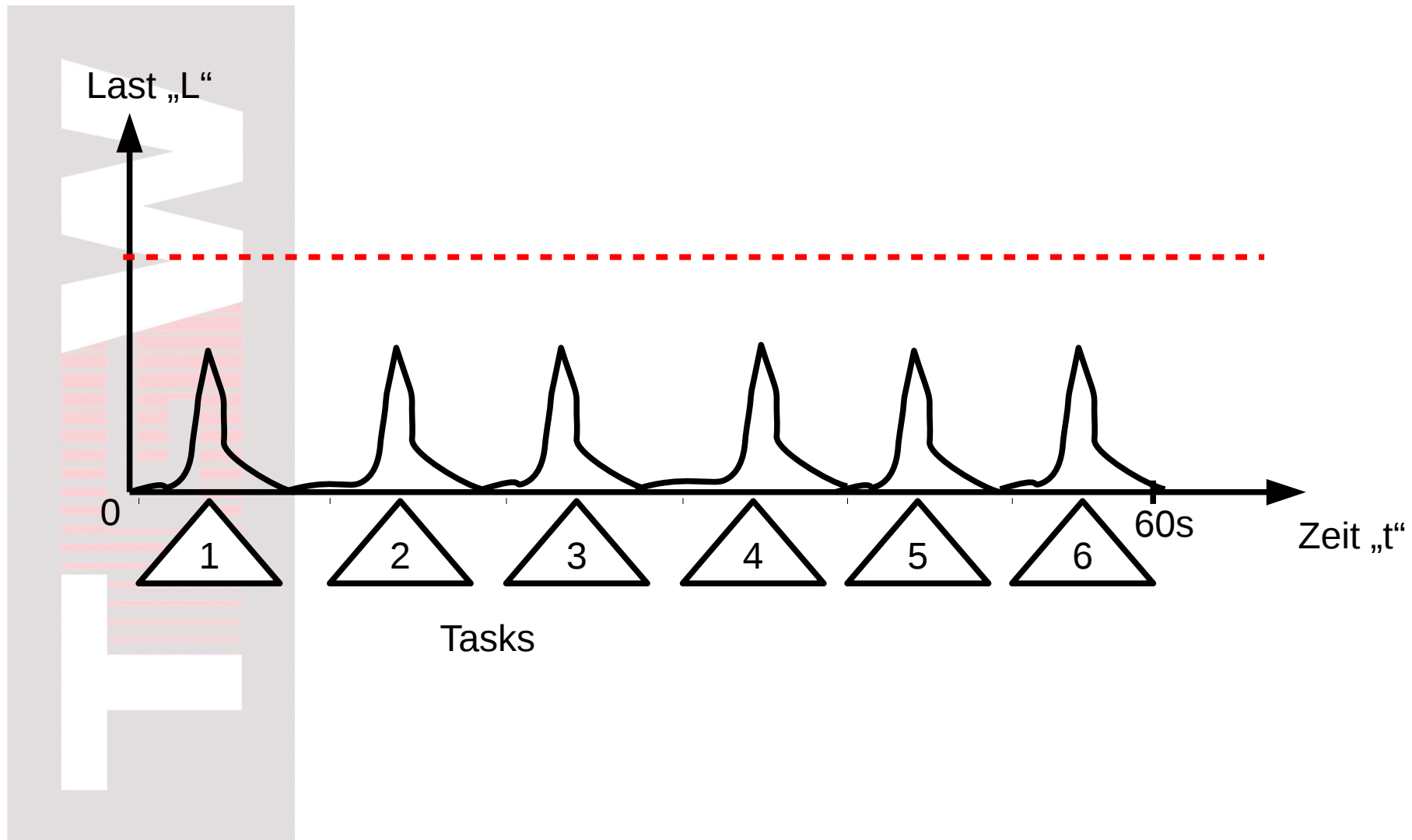
A large, stylized white 'W' logo on a grey background, with a red and white striped pattern on the right side.

Einlasten von Aufträgen („Random Arrivals“)

Zufällig



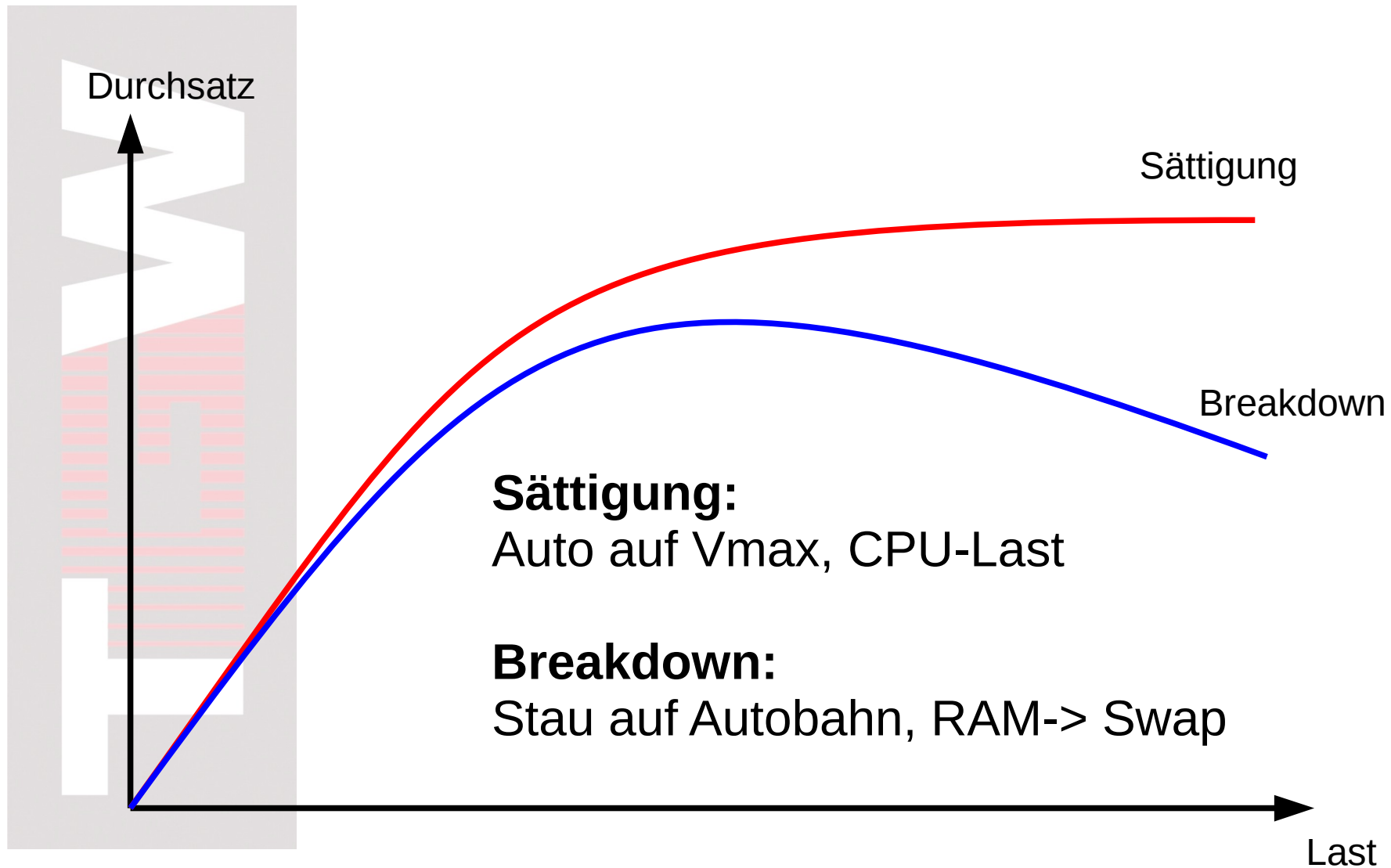
Deterministisch



A vertical decorative element on the left side of the slide. It features a light gray rectangular background. Overlaid on this are white, stylized, jagged shapes resembling a 'W' or a series of peaks and valleys. A red, semi-transparent, wavy pattern is also visible, partially covering the white shapes and extending towards the center of the slide.

Die Verzögerung im Zusammenhang

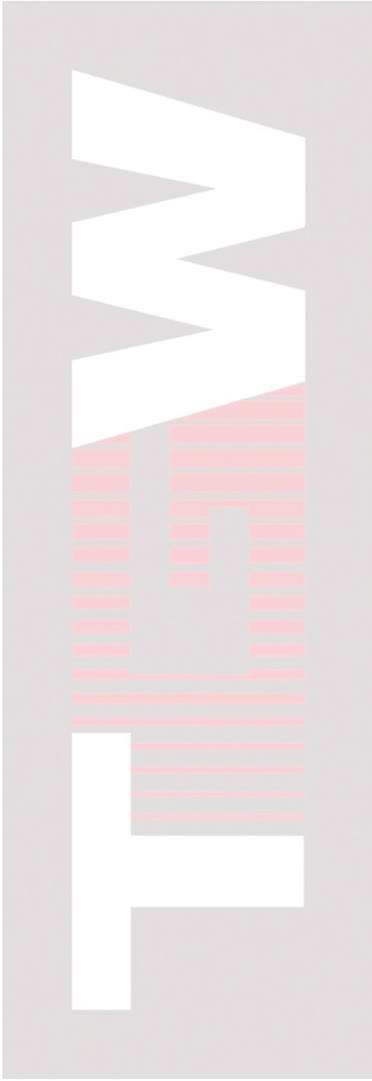
Zwei-Klassen-Gesellschaft





A large, light grey graphic on the left side of the slide. It features a large white 'W' above a large white 'F'. The 'W' and 'F' are partially overlaid by a series of horizontal red lines that create a striped effect across the middle of the graphic.

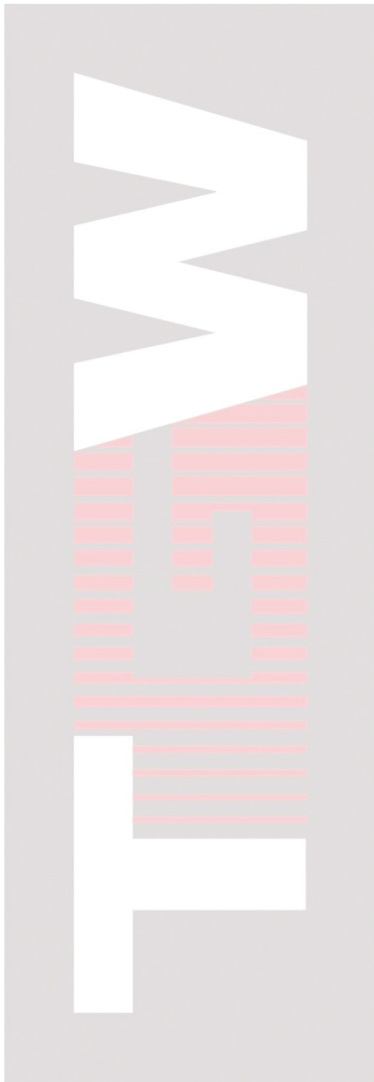
Performance-Tests

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. A series of horizontal red stripes of varying lengths are positioned between the 'W' and the 'F', creating a visual effect that suggests a stylized 'E' or a barcode.

Tu' es!

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

Du wirst nie alles finden.



Messen

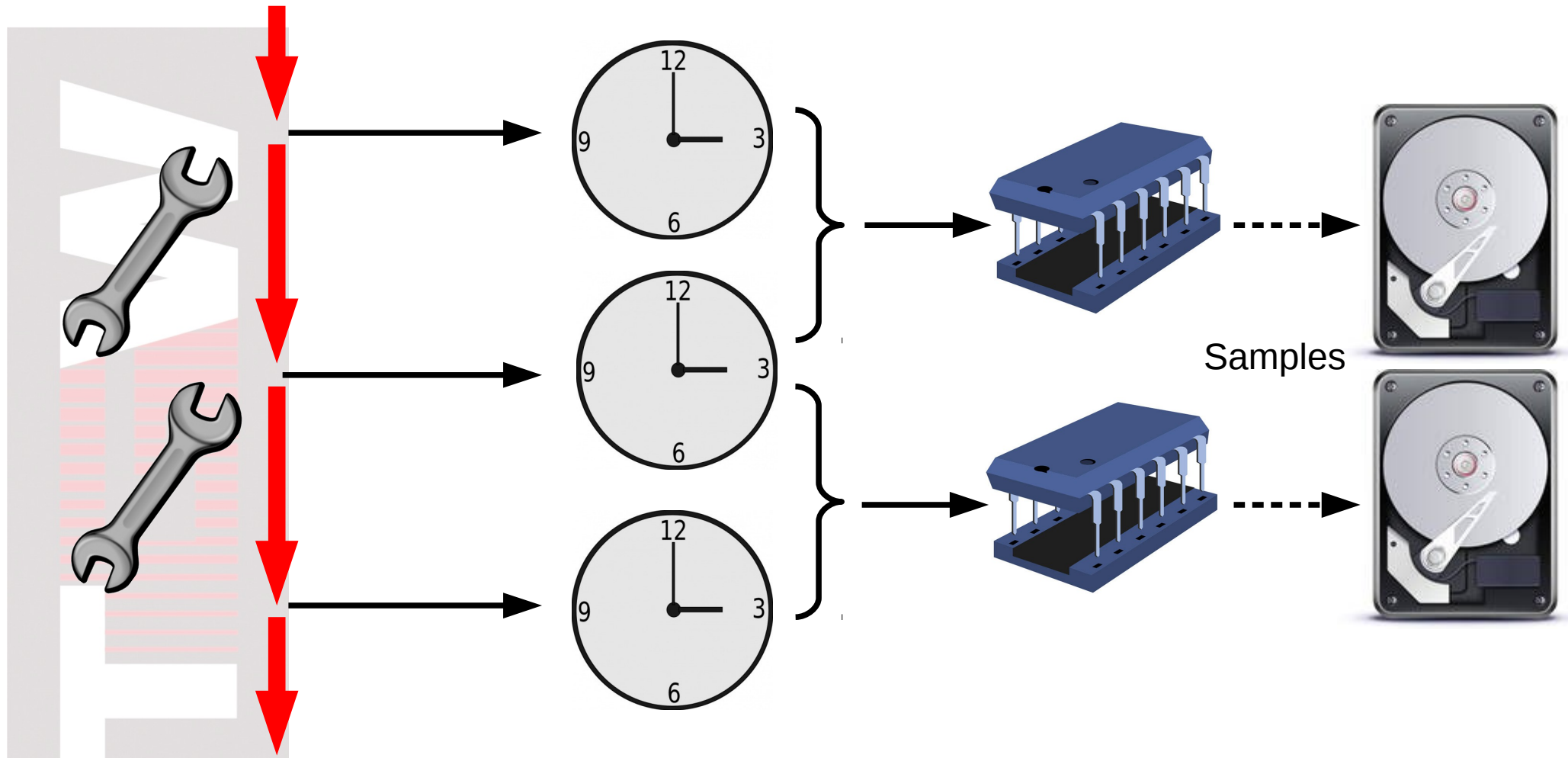
Durchsatz! und Antwortzeit!

S.M.S.

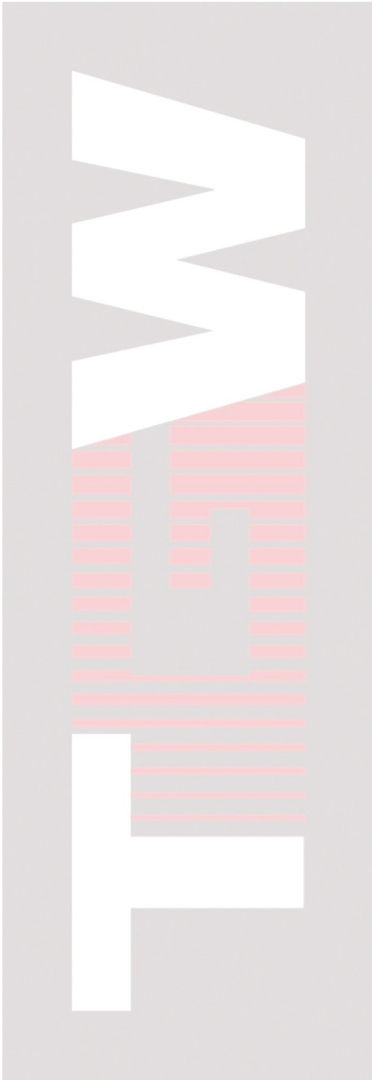
Seiner Majestät Schiff?
Short Message Service?

**Surrogate
Measures
Suck**

Messen



Code Instrumentation

A large, vertical graphic on the left side of the slide. It features a white 'W' and 'F' shape on a light gray background. The 'W' and 'F' are partially filled with red horizontal bars, matching the style of the TEW logo.

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 Vielfaches auf!



Vielen Dank für Eure Aufmerksamkeit!

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



Performance



is rarely
an
accident



<http://www.usn-it.de/index.php/2014/09/30/performance-is-rarely-an-accident-deutsch/>