

A stack of white papers with blue lines, slightly blurred, set against a light blue background.A blurred image of a clock face, showing numbers and hands, set against a pink and purple background.

Ishikawa fishbone diagram

A stack of white papers with blue lines, slightly blurred, set against a light green background.A close-up of a yellow analog clock with black numbers and hands, set against a yellow and orange background.

Skorkovský ESF MU KPH

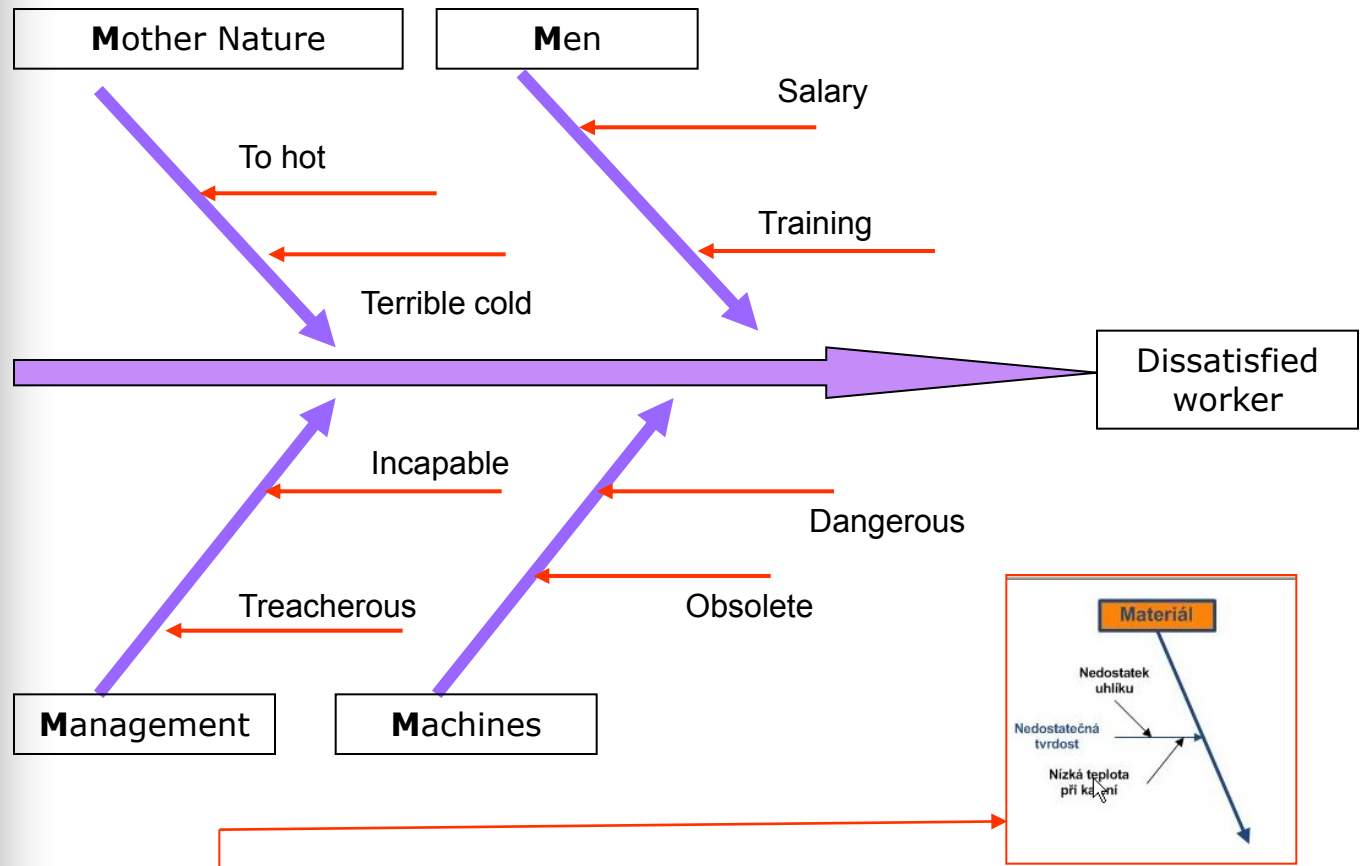
Introduction (FBD= fishbone diagram)

- FBD is a tool to find out relationships:

Cause → Effect

- Use in QM especially in automotive industry
- One of the tools used to create so called 8D report (8 disciplines=FBD+5WHYs+PA+QM)
- Another tool : 5 WHYs - will be cleared later
- Another tool : PARETO=PA analysis will be shown later

Fishbone diagram



(Methods, **Material**, Manpower, Measurement, Machines, Mother Nature, Management)

Some chosen problems which could be find out during ERP support process I

- long response time to requirements
 - requirement is directed to unsuitable consultant
 - bad documentation about service action (poor log)
 - people ask repeatedly same questions at different moments and different consultants are asked
 - solution of disputes :complaint- standard service
 - payment asked for supplied services
1. how much (to whom, type of task, type of the error- see diagram
 2. starting time for invoiced services, response time
 1. requirement is handed over till the problem is solved
 2. time of starting solving -solved
 3. start of implementation of the bad object till end of testing
 4. training

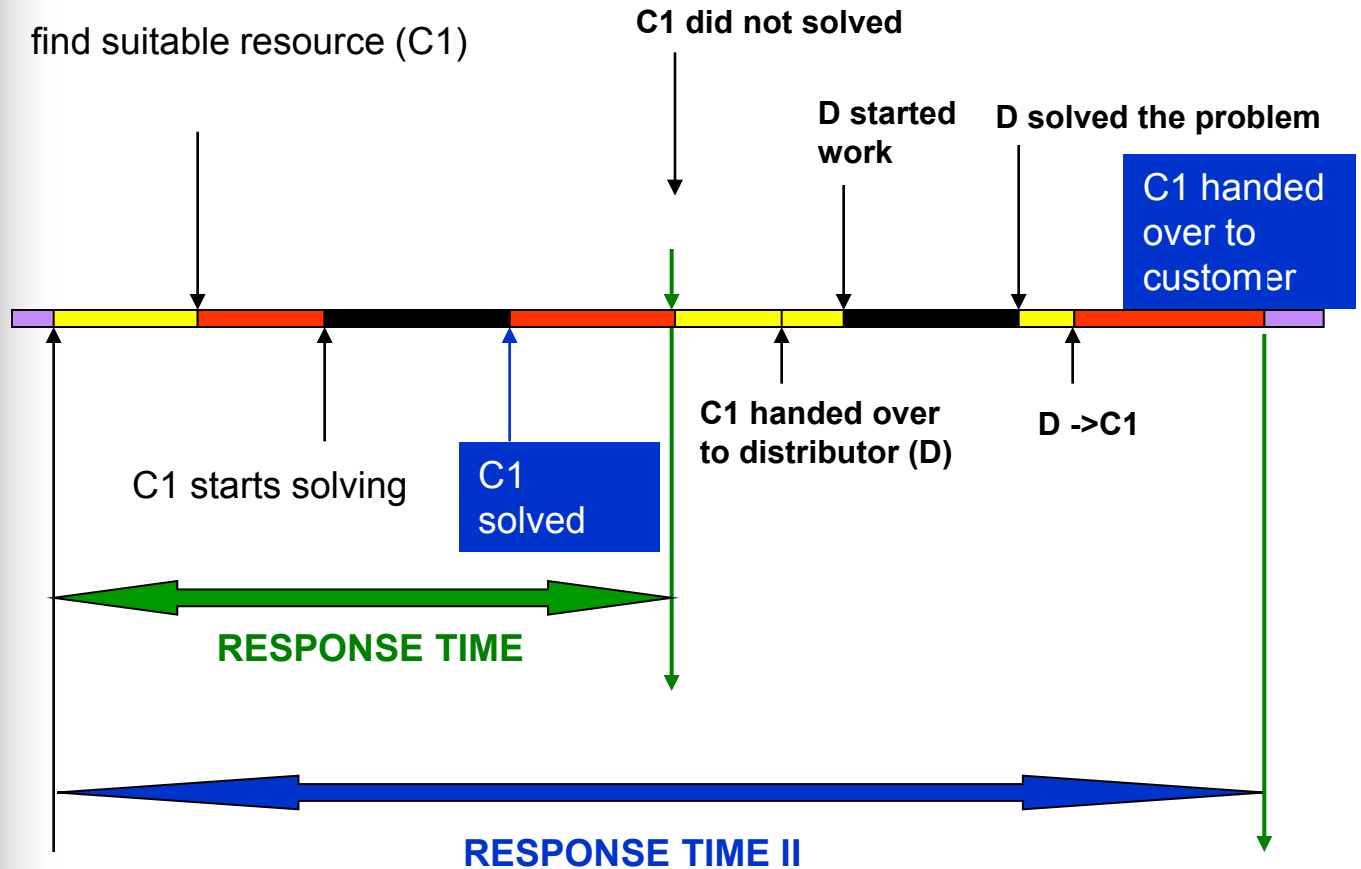


Some chosen problems which could be find out during ERP support process I

- bad training methodology
- bad consultants
- bad communication protocol
 1. telephone
 2. e-mail
 3. SKYPE
 4. LYNC
- lack of interest of the management of both parties
- right specification of reaction time (reaction to errors)
- specification to the error types and related response times
- response time of the distributor (ERP integrator ERP)



Diagram – response time



handed over requirement



= active work

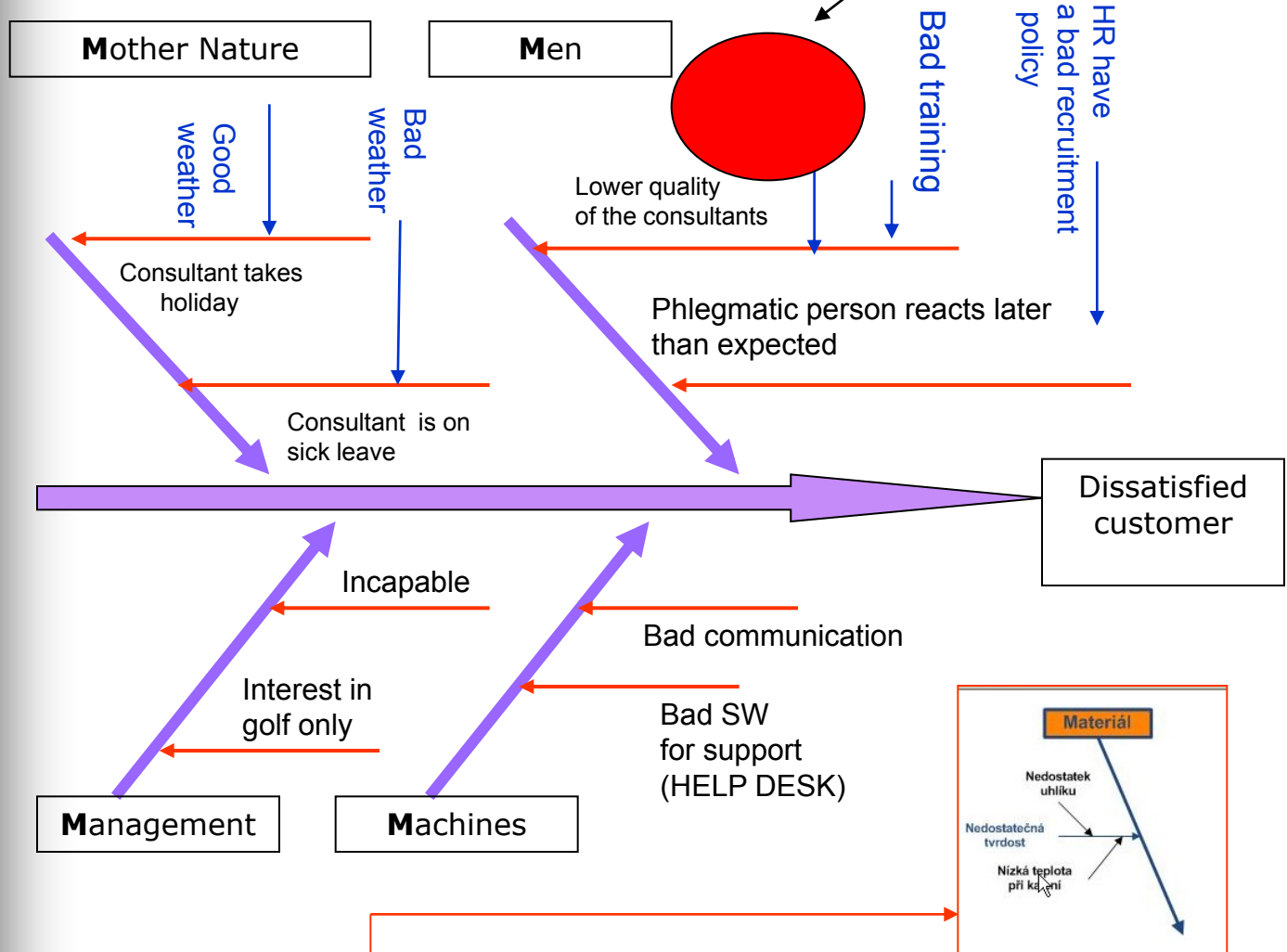
C1=consultant 1



= idle time

Fishbone diagram-support

heart of the problem



(Methods, **Material**, Manpower, Measurement, Machines)

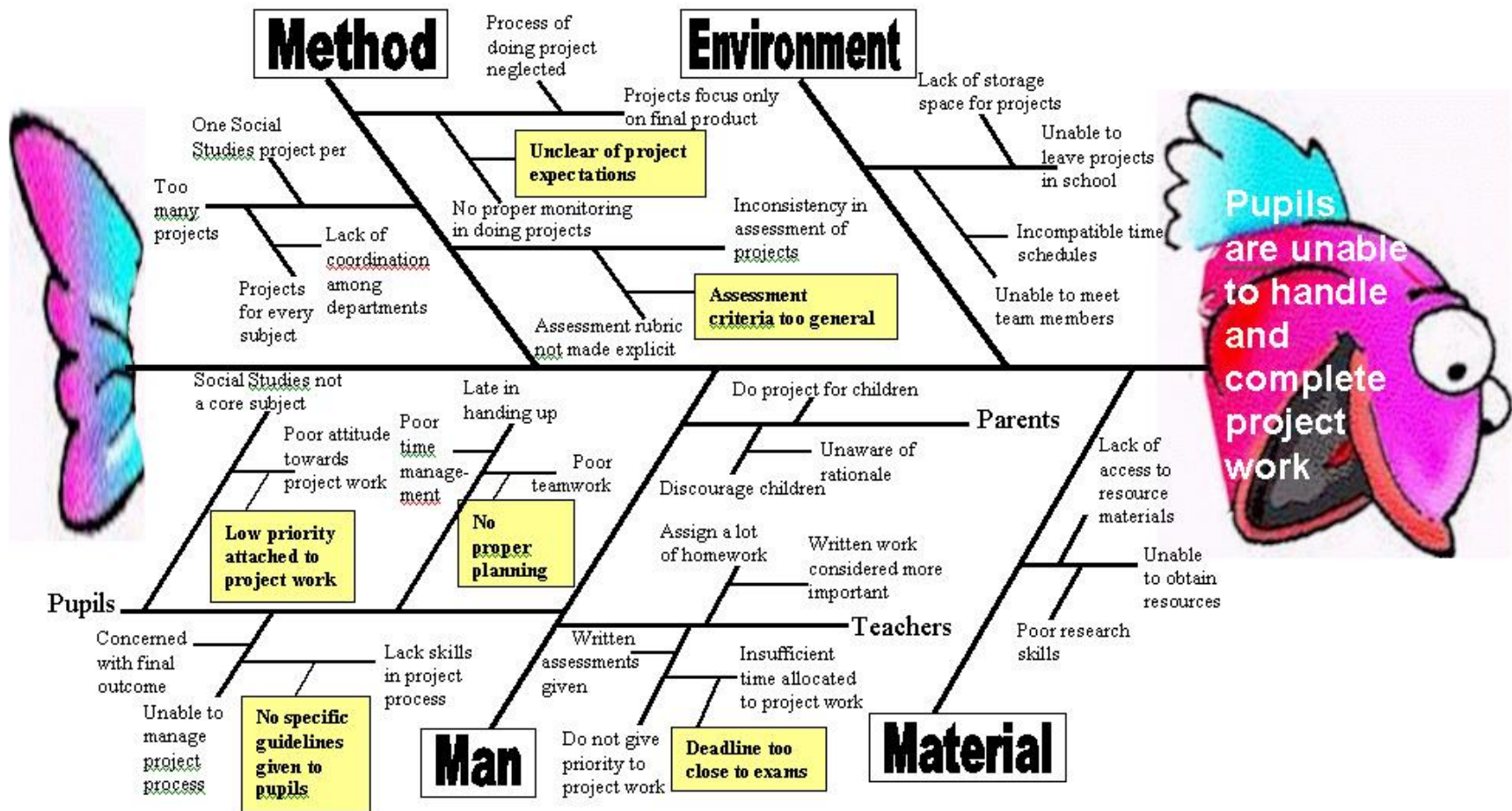


Dissatisfied employee I

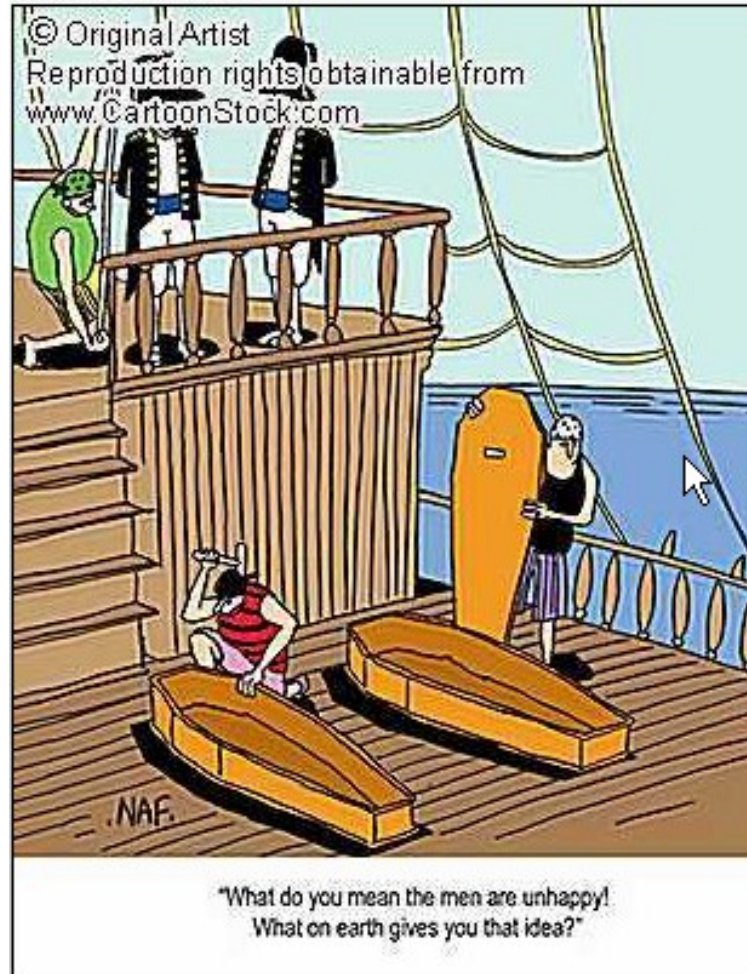


"EVERYTHING OKAY, PHILLIPS?"

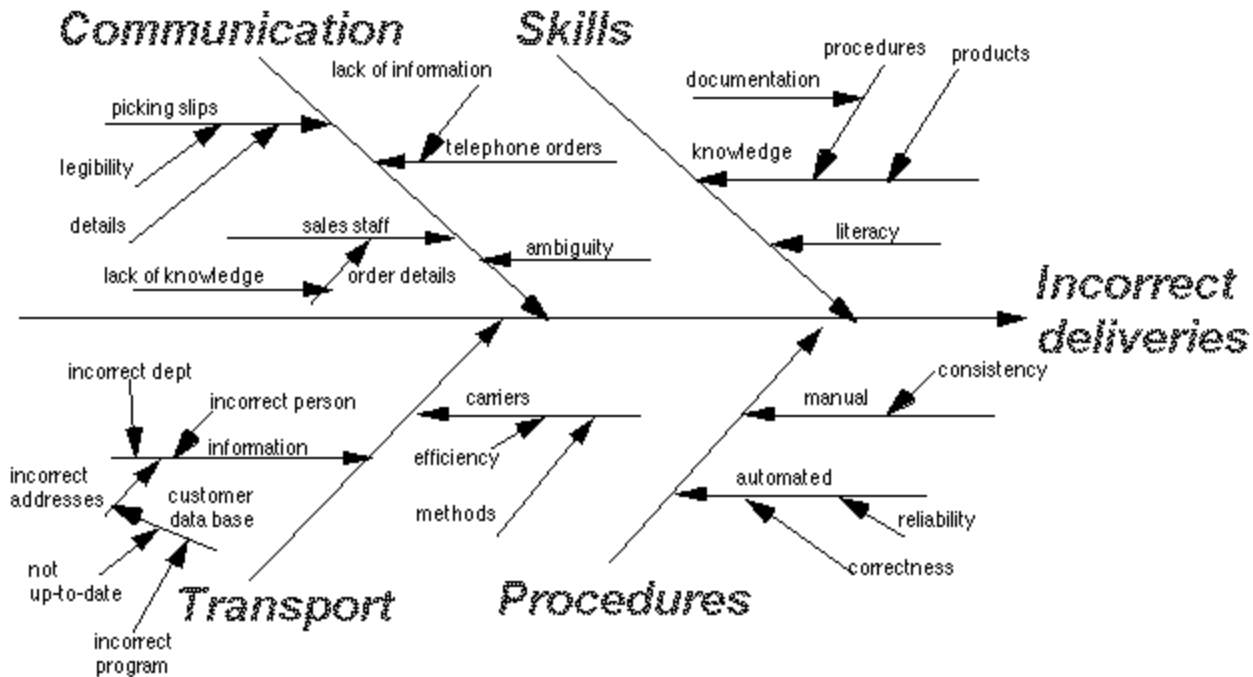
FBD- another example I



Dissatisfied employee II



FBD- another example II



5WHYs

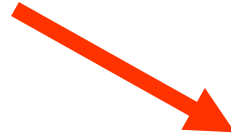
- WHY 1 :Why my car had stopped ?
- No petrol in tank
- WHY 2 :Why i did not have a petrol in my tank ?
- I did not buy in the morning on my way to work
- WHY 3 :Why i did not buy a petrol ?
- No money in my pockets
- WHY 4 : Why no money i my pockets?
- Evening poker
- WHY 5 : Why i did not win a poker game?
- I do not know how to bluff!



5WHYs



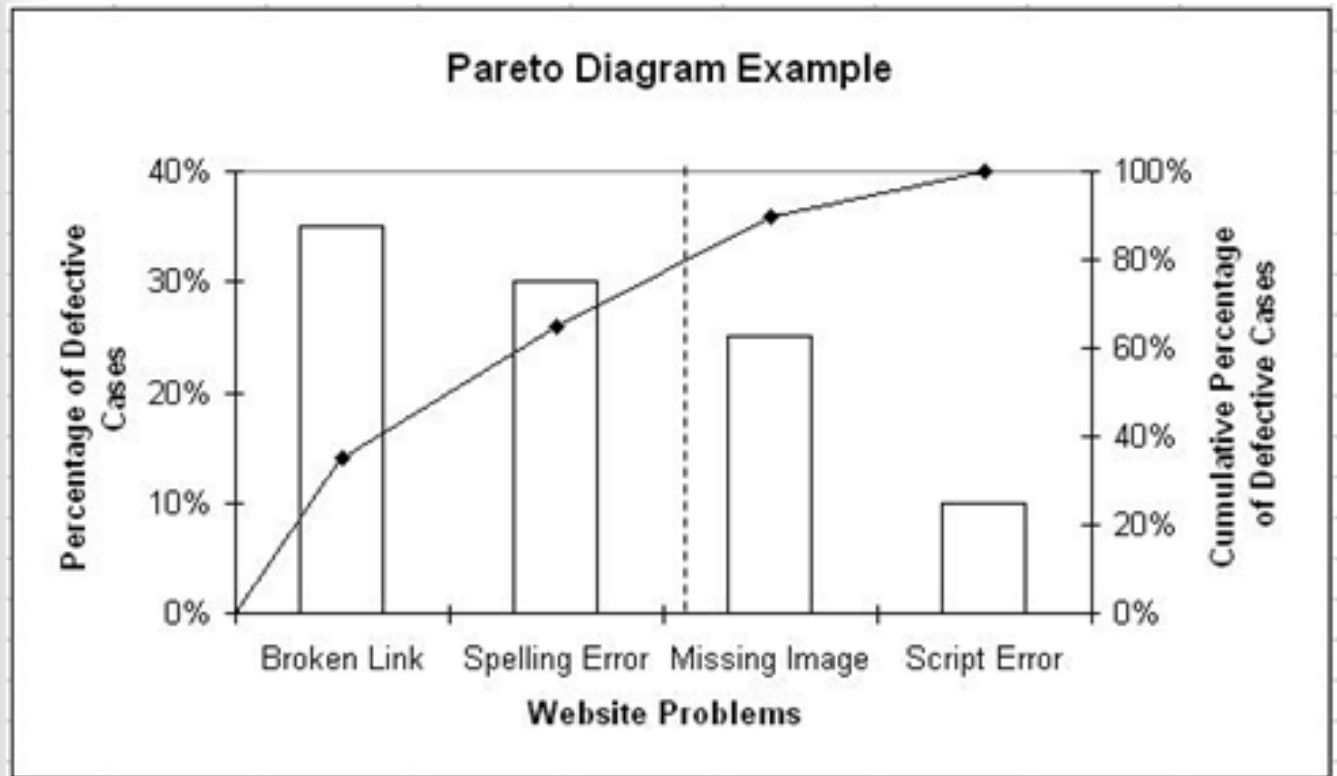
Cause



Effect



Pareto analysis I

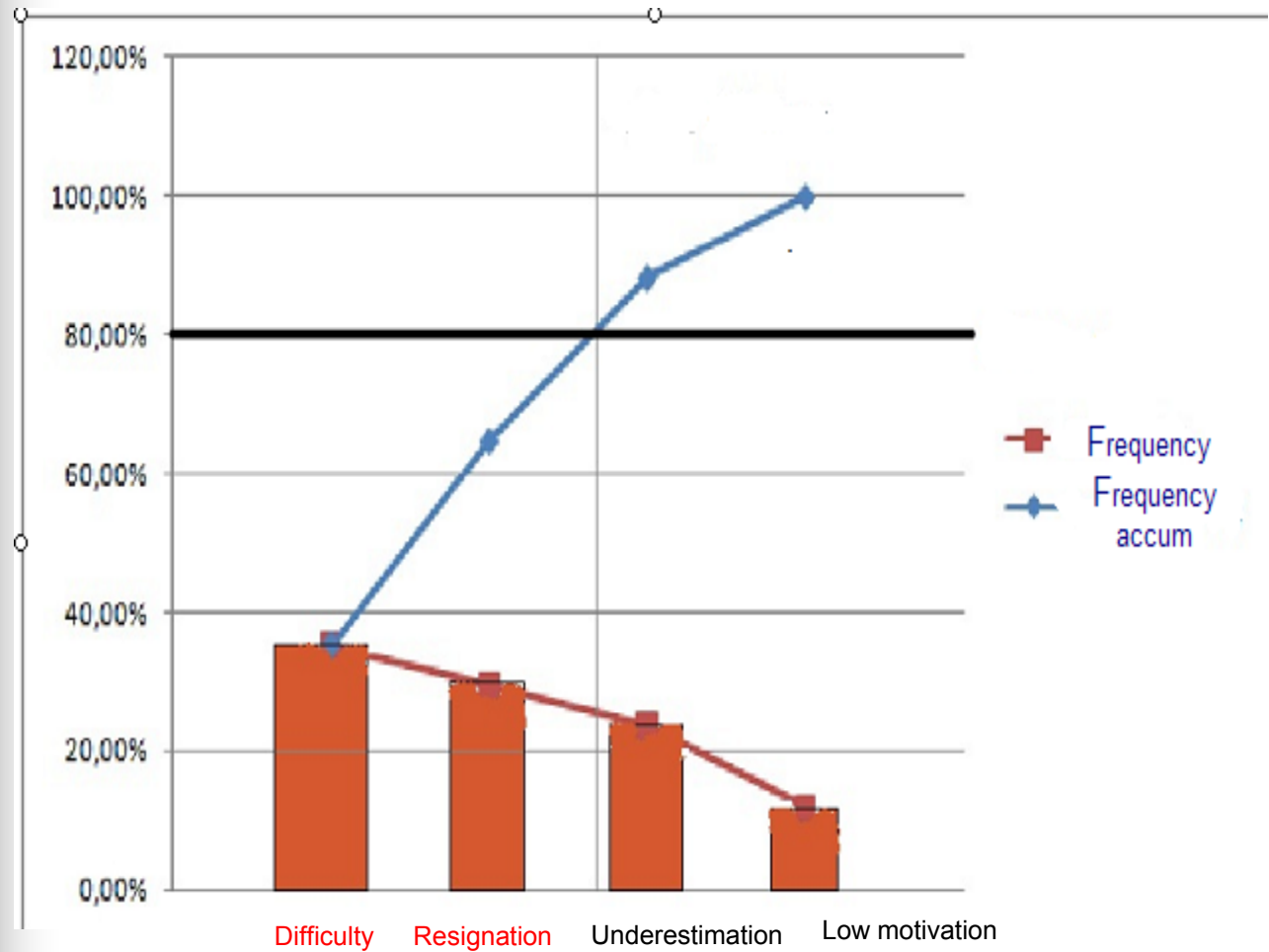


Pareto analysis II - data

	Frequency	Freq (%)	Freq accum(%)
■ Difficulty	6	(35,29)	(35,29)
■ Resignation	5	(29,41)	(64,71)
■ Underestimation	4	(23,53)	(88,24)
■ Low motivation	2	(11,76)	(100,00)

Explanation : $35,29+29,41=64,71$
 $64,71+23,53=88,24$
 $88,24+11,76=100,00$

Pareto analysis III





Vilfredo Pareto in person...