



**HUSTEF**  
HUNGARIAN SOFTWARE TESTING FORUM

# When Less is More – Applying Pareto-rule in test automation

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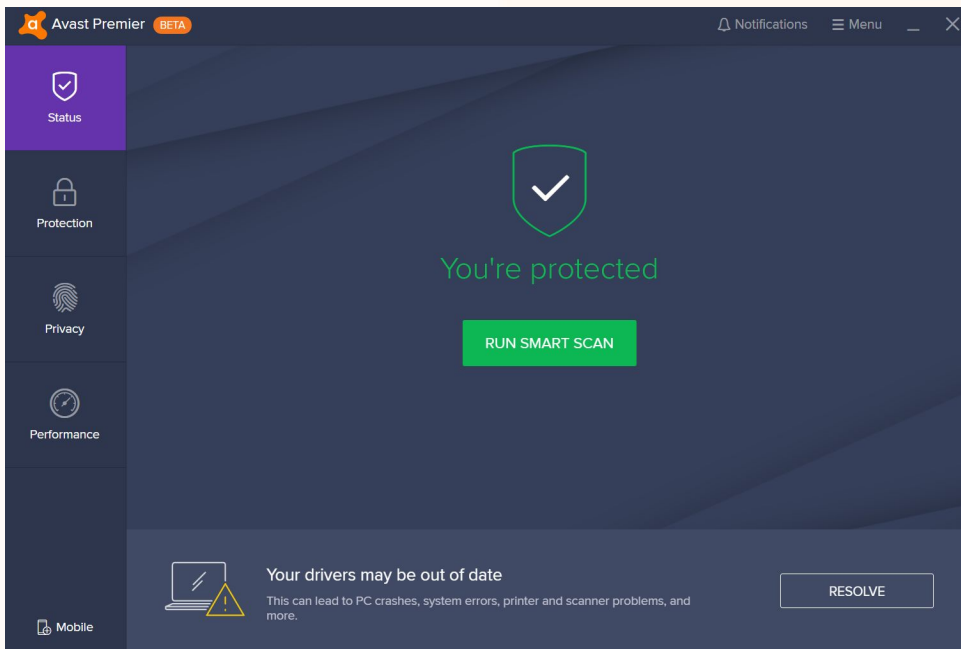
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# Avast Software, The Czech republic



- Cyber Security Company
- 400+ mill users
- Powered by NortonLifeLock Inc





# Avast - Consumer Windows Division

Desktop Windows Antivirus

1 product, 2 brands

Avast  
AVG

1 month release cycle

weekly betas

Testing

New Features  
**Regressions**

170+ million end users



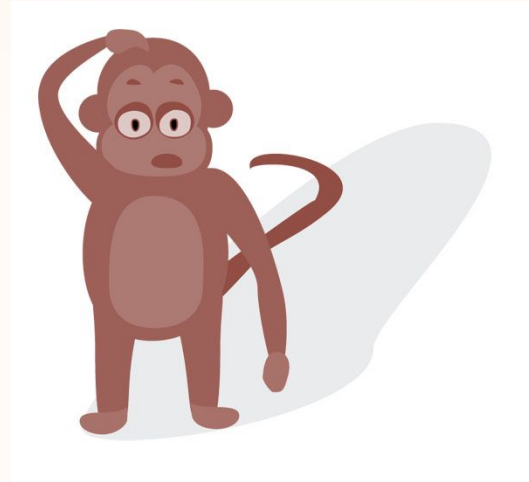
# As the product grew problems appeared

## Challenges during testing

- Continuous increasing number of possible regressions
- Decreasing time to market
- less time for "proper" testing
- We don't have enough resources

## Requirements from management

- keep attention on details
- everything is important
- we must test everything



~~IMPOSSIBLE~~

~~UNABLE~~

## Pareto Principle - The 80/20 Rule



For many events, roughly  
**80%** of the effects come from  
**20%** of the causes

The law of the vital few  
Est. 1896 by Vilfredo Pareto at the University of  
Lausanne

[https://en.wikipedia.org/wiki/Pareto\\_principle](https://en.wikipedia.org/wiki/Pareto_principle)

# How to apply this in software testing?





Money Makers



Functionality



Customer Path

## Facts about our product

- Windows consumer antivirus product
- Users use our products
- The source of money for our company





# Money makers

Avast Free Antivirus

Status > Run Smart Scan

## Run Smart Scan

14%

Scanning for viruses...

STOP SCAN

UPGRADE

Settings

Protection

Privacy

Performance

WEAK PASSWORDS

COMPATIBLE CHECK

PERFORMANCE ISSUES

NETWORK THREATS

BROWSER ADD-ONS

AVG. AntiVirus Free

Menu

## You have basic protection

Basic protection

Full protection

HOW IT WORKS ?

Computer

Web & Email

Hacker Attacks

Private Data

Payments

PROTECTED

PROTECTED

NOT PROTECTED

NOT PROTECTED

NOT PROTECTED

SCAN COMPUTER

FIX COMPUTER PERFORMANCE

Last computer scan: Never

Virus definition: 11 hours ago

Stay safer online with Internet Security.  
Block hackers. Hide private photos. Shop safely. And more!

Buy Now

TRY IT FREE



# Money makers\*

Sale/acquisition path	% overall revenue	Total % revenue
End of license	20.39%	20.39%
Top screen	12.90%	33.29%
Buy me button	9.76%	43.05%
Smart Scan	8.55%	51.60%
Porn sites toaster	7.48%	59.08%
Old drivers	6.33%	65.41%
No more tracking	3.89%	69.30%
Web shield virus	3.83%	73.13%
Tune my PC	3.42%	76.55%
Tune my PC toaster	3.36%	79.91%

\*components, test names, sales path and people are not real and any similarity to existing components, tests and people is accidental



## Functionality\*

- Have a test cases list of the product functionality
- Distribute the list between managers, leaders, experienced testers, users
- Give them number of votes based on the number of test cases

### Result

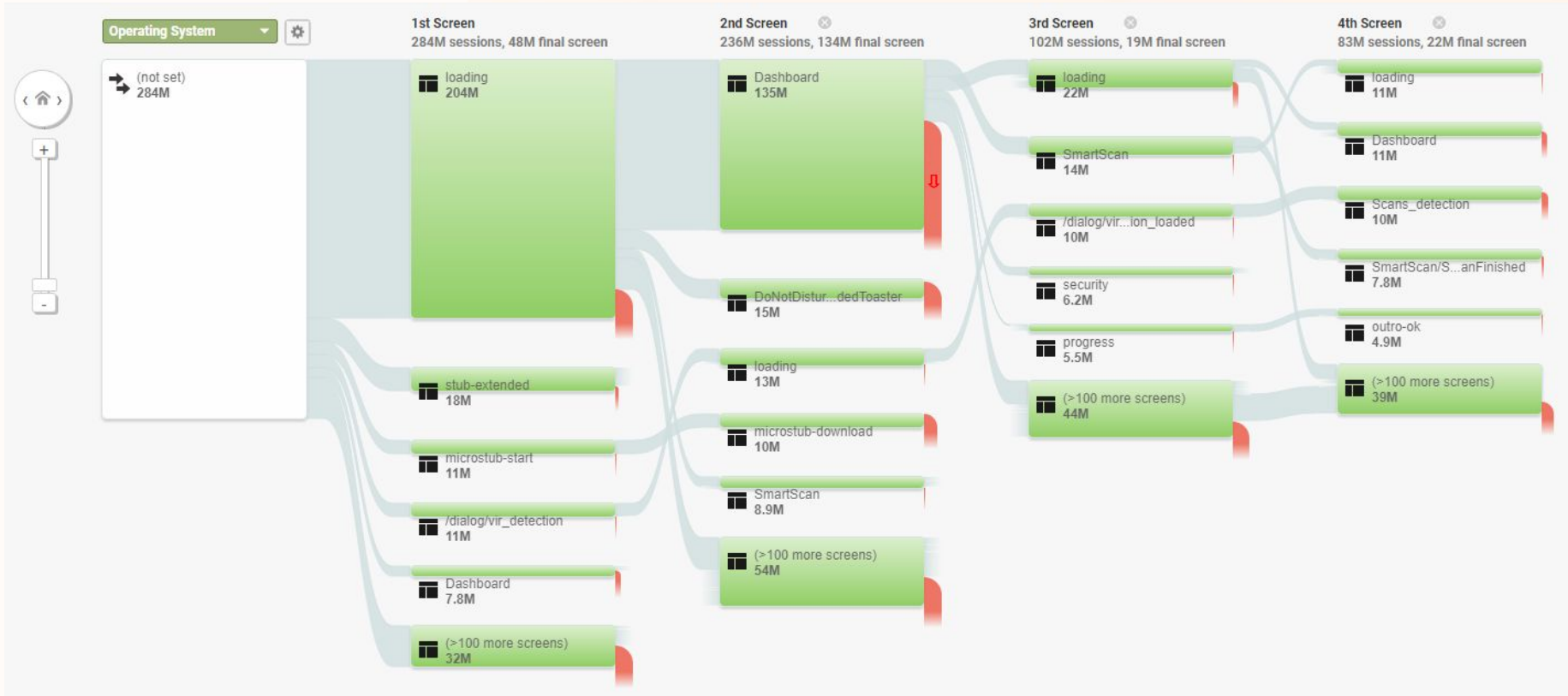
- Sorted list of test cases based on the votes

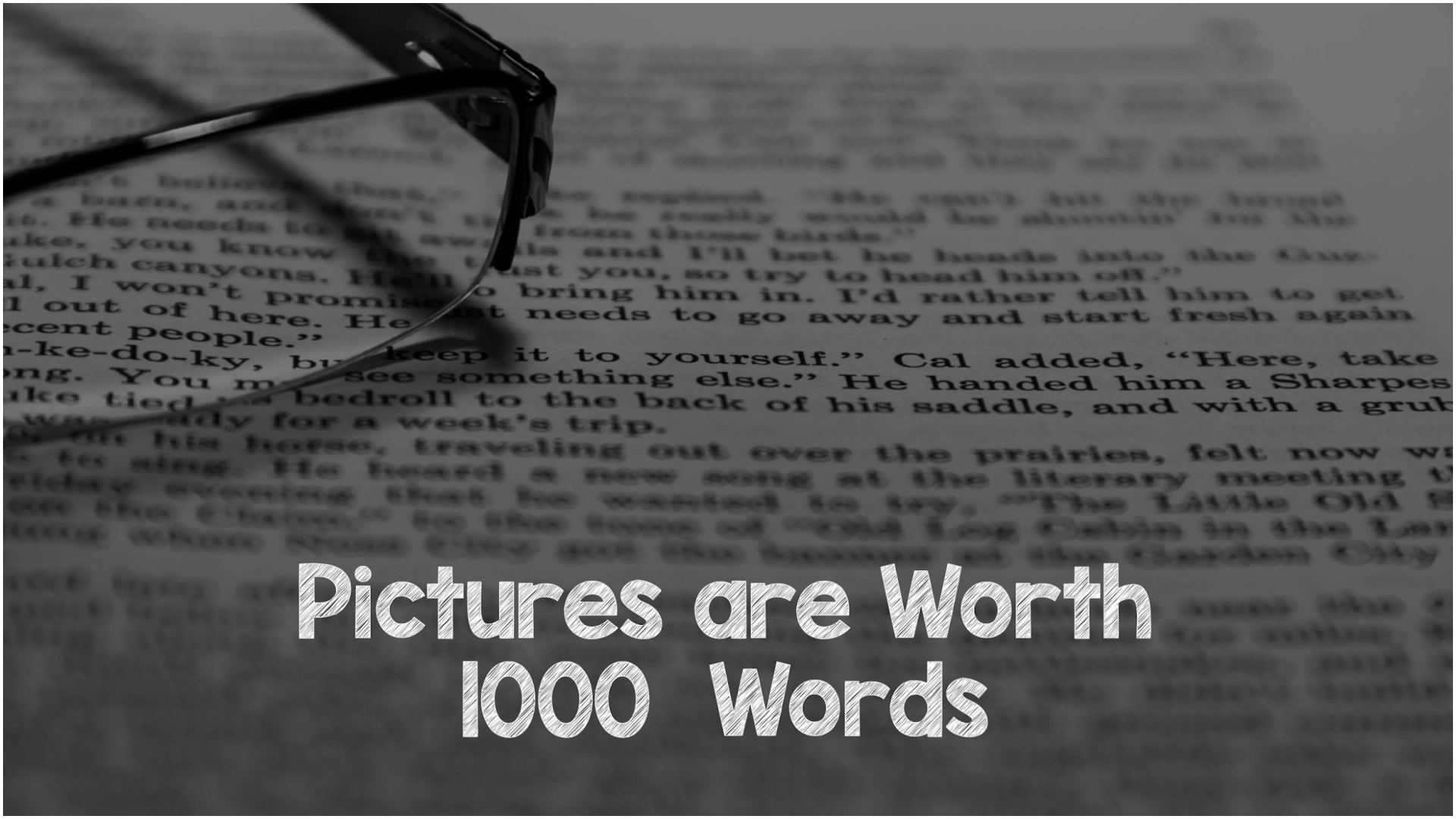
ID	Component name	Test(case) name	Josef Reditel	Petr Manazer	Karel Neschopny
1	Installation	clean installation	3		
2	Update	Win AV can be updated		3	3
3	Installation monitor	VPS update - No errors in diffs during VPS update	2	3	
4	Installation monitor	Program update - No errors in diffs during program update			
5	Licensing	Activation (automatic/manual) of a product via license or an account			1
6	Licensing	During installation insert license			
7	Licensing	After Installation purchase	1		2
...	...				
1000	...				

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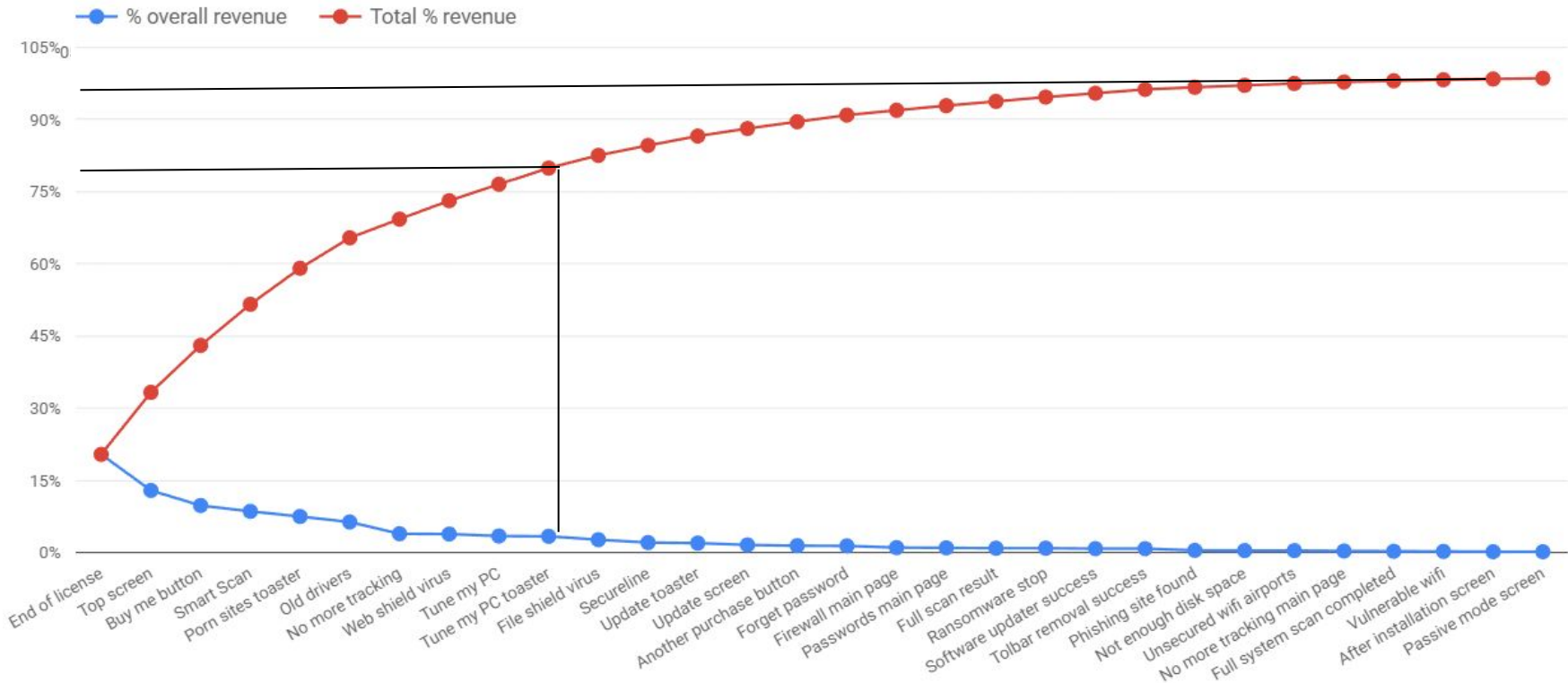
# Customer path





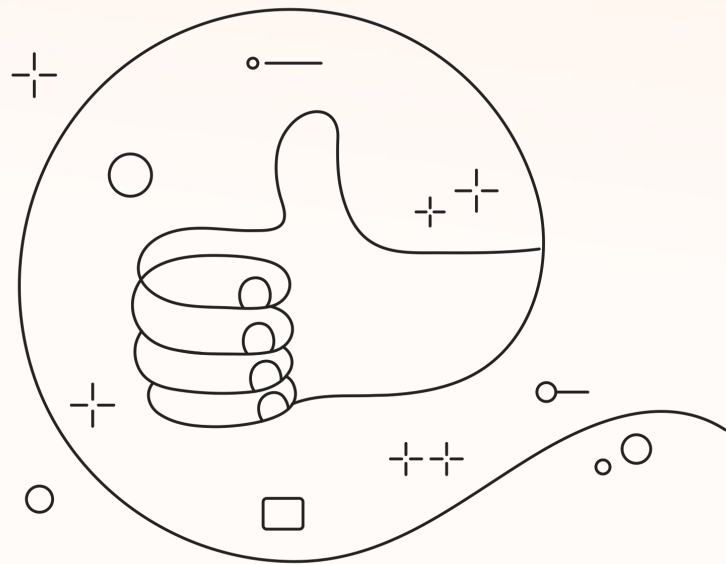
**Pictures are Worth  
1000 Words**

# Money makers - revenue per flow



# Application in test automation

- Sorted list of items guides you where to start
- Start with automating the easiest things first
- Different categories present the different views on the importance
- Think about 80/20 rule during writing separate tests
- 80/20 coverage is not ultimate goal



# Perform regular reviews







# Feedback

- It's transparent
- It's hard to be perfect
- People tends to negotiate
- Have it public
- If you don't write a test for it, it does not mean, it does not work
- Always test the product by hand

# Thank you

