



Cyber risks in the Swiss IT landscape: “What do we have to do?”

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SCHWEIZERISCHER NATIONALFONDS
ZUR FÖRDERUNG DER WISSENSCHAFTLICHEN FORSCHUNG



ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE



OVERVIEW

1. Introduction

2. Challenges for Switzerland

3. Conclusions

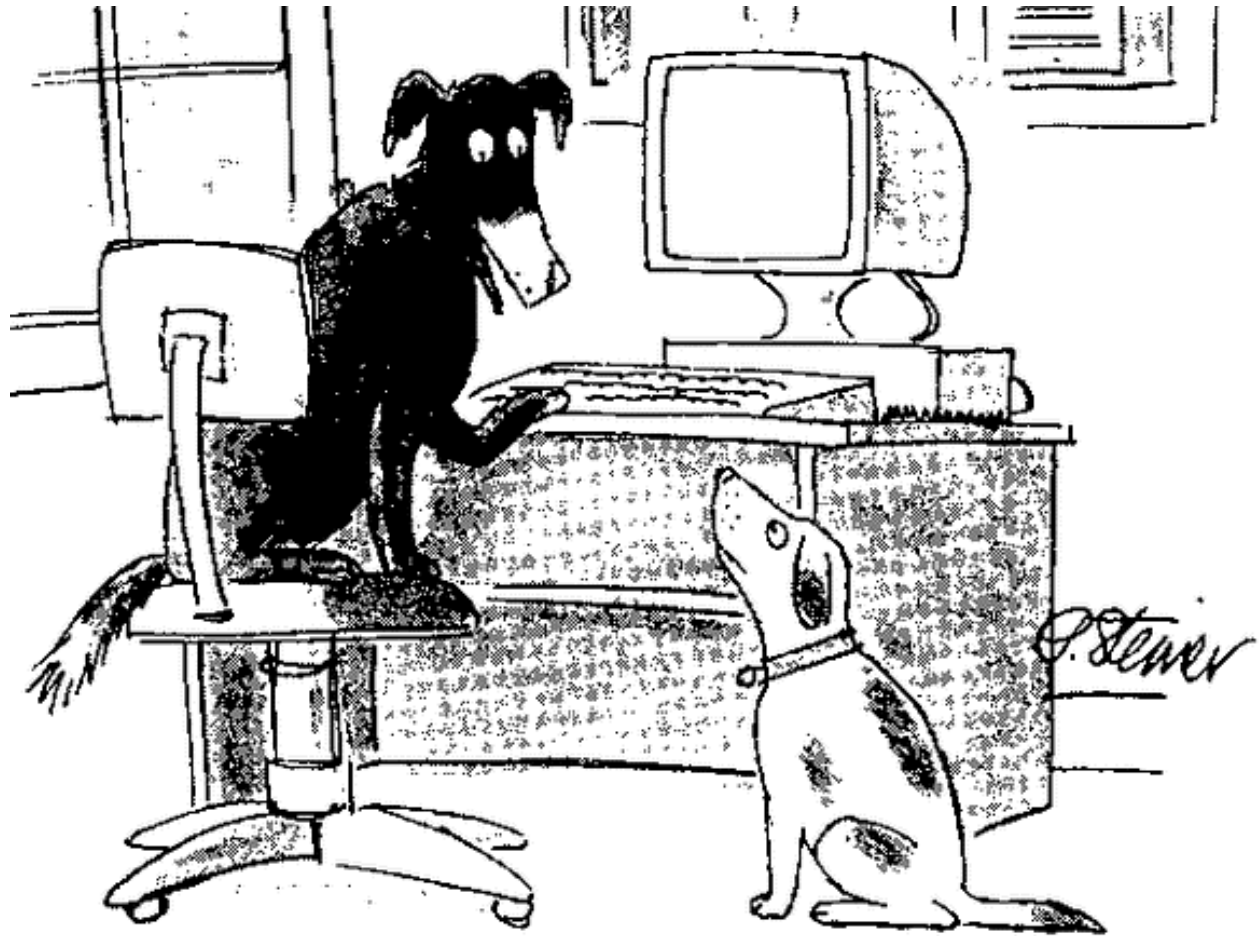


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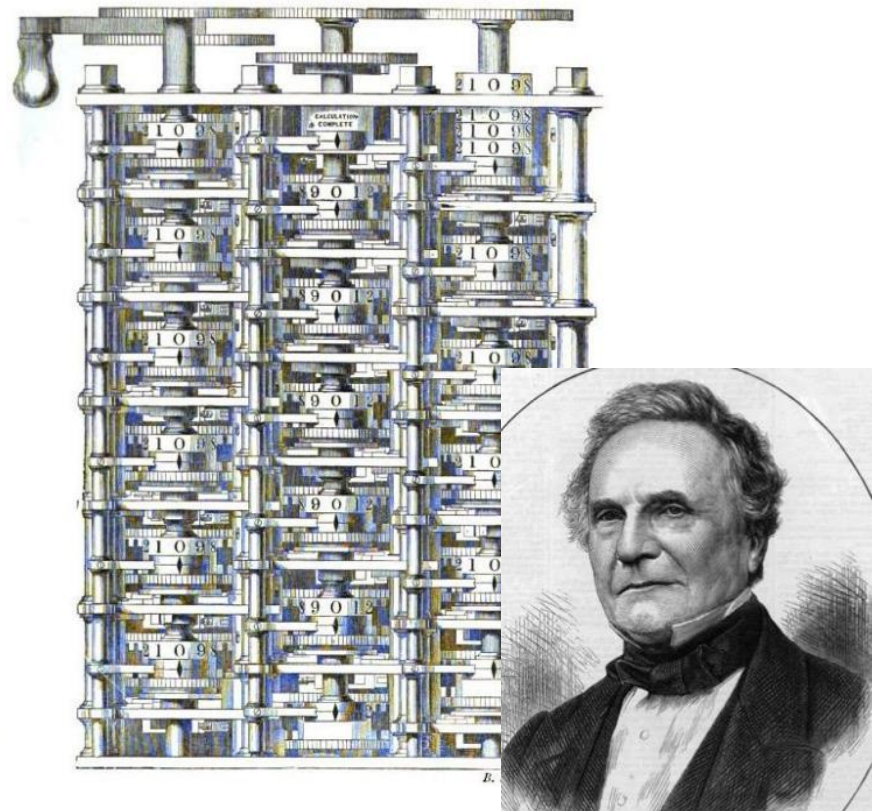


«On the Internet, nobody knows you're a dog»

The Beginnings...

„The Analytical Society“ (19th century)

Members were resolved to
***“do their best
to leave the
world a wiser
place than they
found it.”***



C. Babbage, 1791-1871



Goals of the ICC founders

1. To understand the world

real-world problems, security, communication, simulations, games

2. To formalize problems

mathematical theories and asking the “right” questions

3. To find solutions

algorithms, systems

4. To understand information and intelligence

what is intelligence, and how can it be simulated?

“The father of information theory”



April 30th, 2016

Google celebrated the 100th anniversary of Claude Shannon

Today





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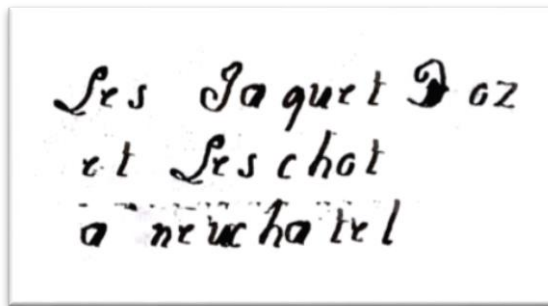
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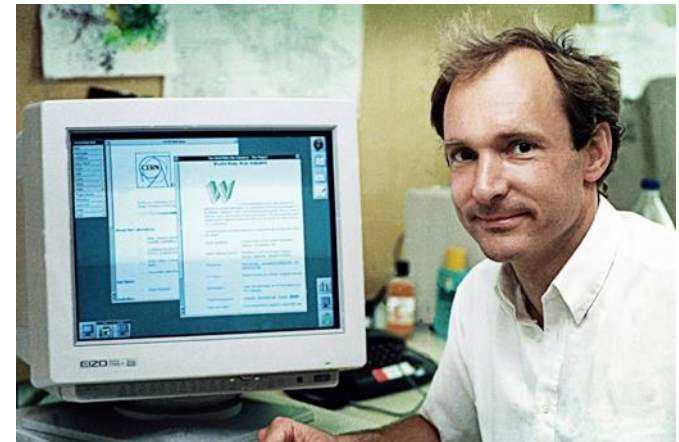
Challenges for little Switzerland



Switzerland in 1770 and in 1989

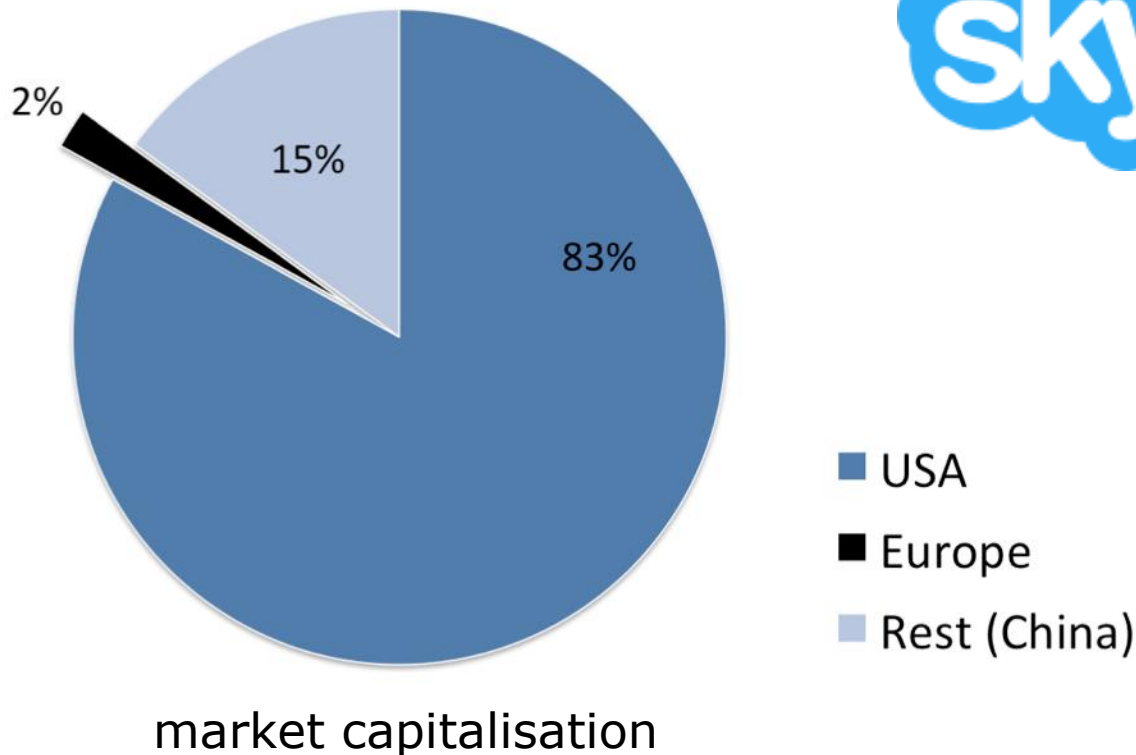


Jaquet-Droz automata



T Berners Lee

Where does „digital“ Switzerland stand nowadays?



What „digital strategy“ for CH?



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Aktionsplan Strategie "Digitale Schweiz"

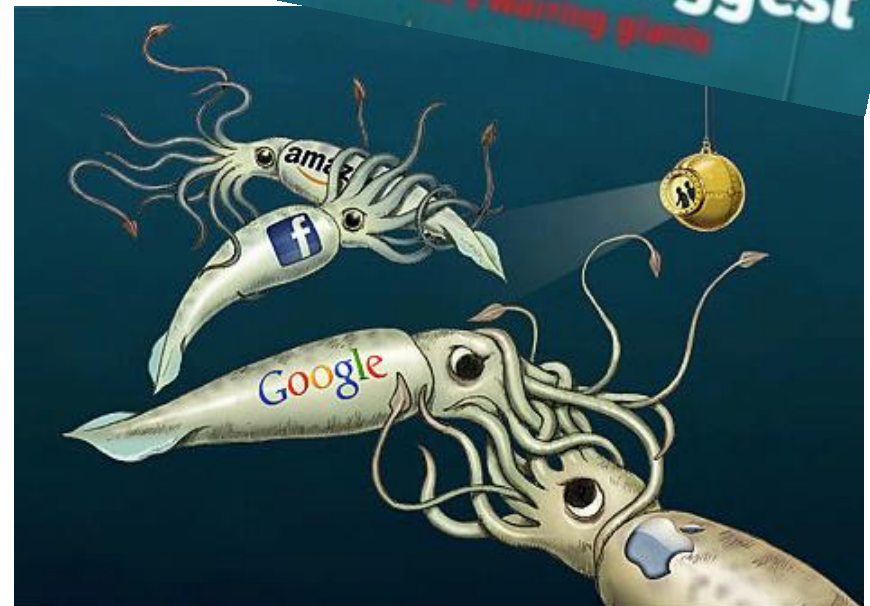
Massnahmen der Bundesverwaltung

April 2016

Strategie „Digitale Schweiz“¹

April 2016

„Survival of the biggest“



The US and Europe: “Computer Science” or “Informatik”?



On risk: Privacy !



WE READ YOU!

A private example



Name : V e t t e r l i
 Vorname : Martin Frédéric
 geboren : 4.10.1957 in Neuchâtel
 Heimat : Stäfa/ZH
 Eltern : Arthur [REDACTED] und Irène geb. Rauber
 Zivilstand : ledig
 Kinder :
 Beruf : Stud ETH
 Wohnort : Cortaillod, Les Joyeuses 22 b/Eltern
 Militär :
 Ausweise : +Pass 2763891 v. Neuchâtel.

richtig
 alias

Foto ☐

Mitgl. :

Funkt. :

Ausschr. :

TK

PK

Hirtel



"Longtime listeners, first-time callers."



More cyber risks for Switzerland

1989: Tim Berners-Lee

2010/11: Arab Spring

2010/13: Wikileaks, Snowden

2016: Panama Papers?

→ Bitcoins and Block chain !

Cybersecurity, CH and the SNSF

Zurich Information Security & Privacy Center (ZISC)

ETH Zurich

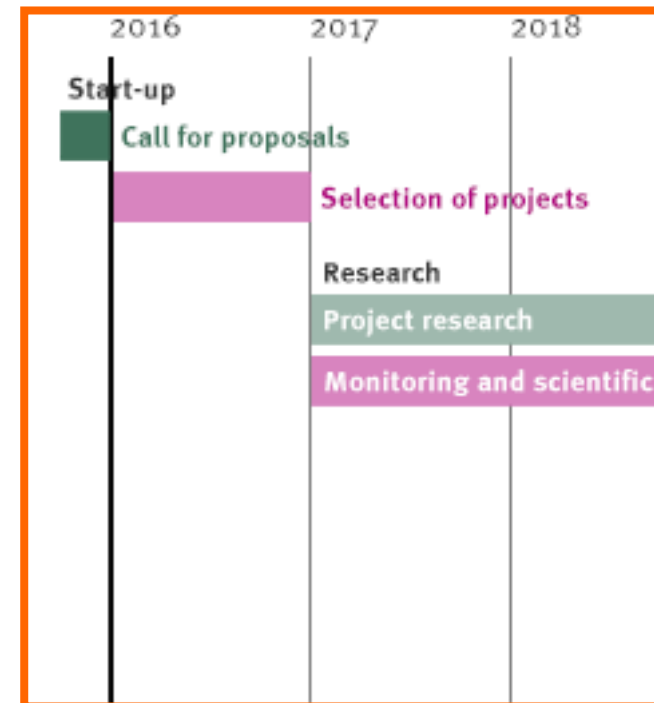
Cryptologic algorithms

Prof. Arjen Lenstra, EPFL

Quantum cryptography

Prof. Nicolas Gisin, Uni Geneva

→ **NRP 75 on “Big Data”
coming soon...**





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Are we becoming a „digital colony“?

1. Local innovation

continue local success story

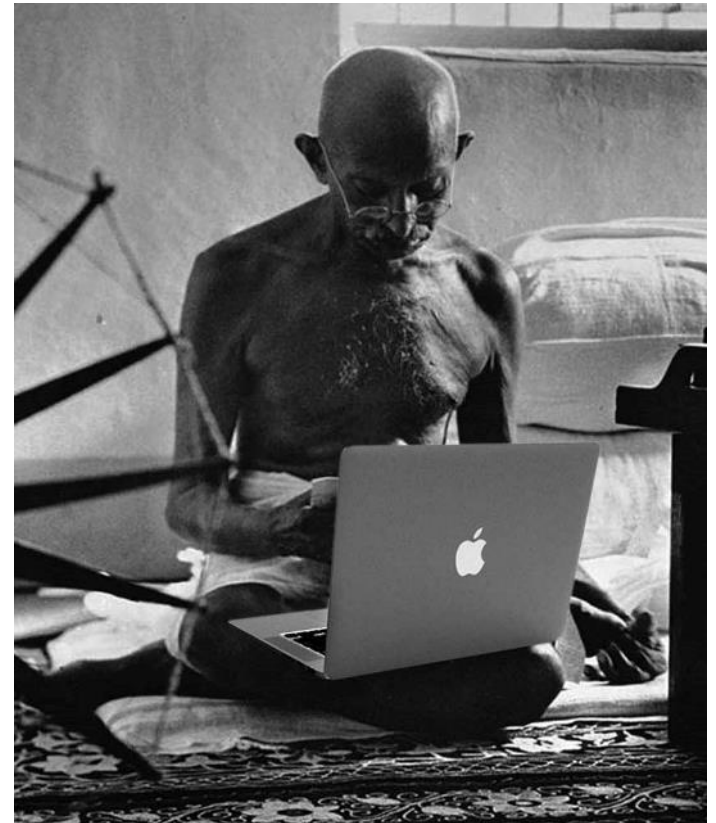
2. Security and privacy

better here than in the US

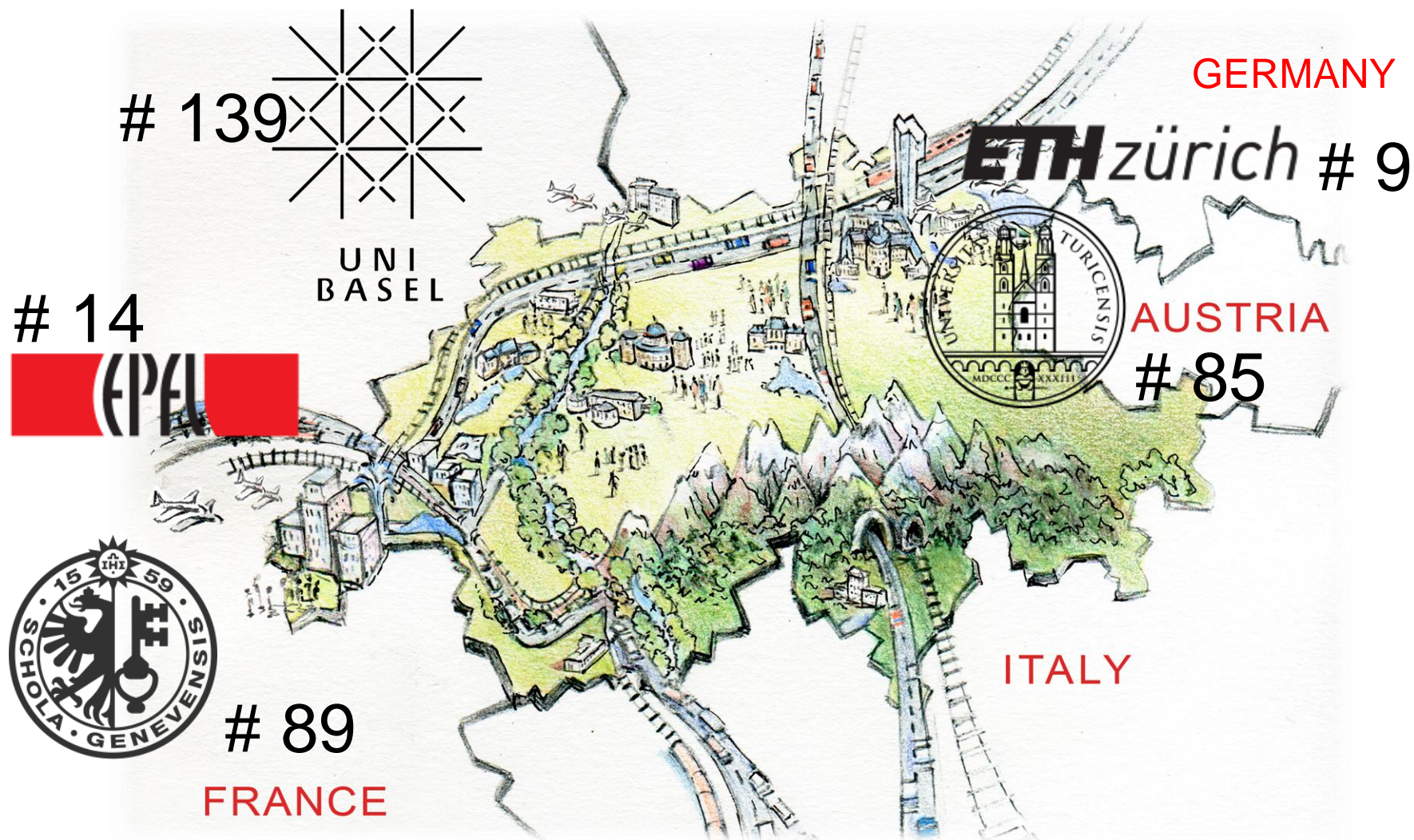
3. Education and research

Our strength!

4. Sharing Economy?



The „Swiss Innovation Valley“





SUMMARY

In Switzerland we must stay on top of IT and Computer Science in general, if we want to be on top of cyber risks !

Thank you!



*«Remember when, on the internet,
nobody knew who you were?»*