

It's just a Web server

a plea for simplicity

Bertrand Delacrétaz
@bdelacretaz, grep.codeconsult.ch

Principal Scientist, CQ/AEM R&D group, Adobe Basel
Apache Software Foundation Member and Director

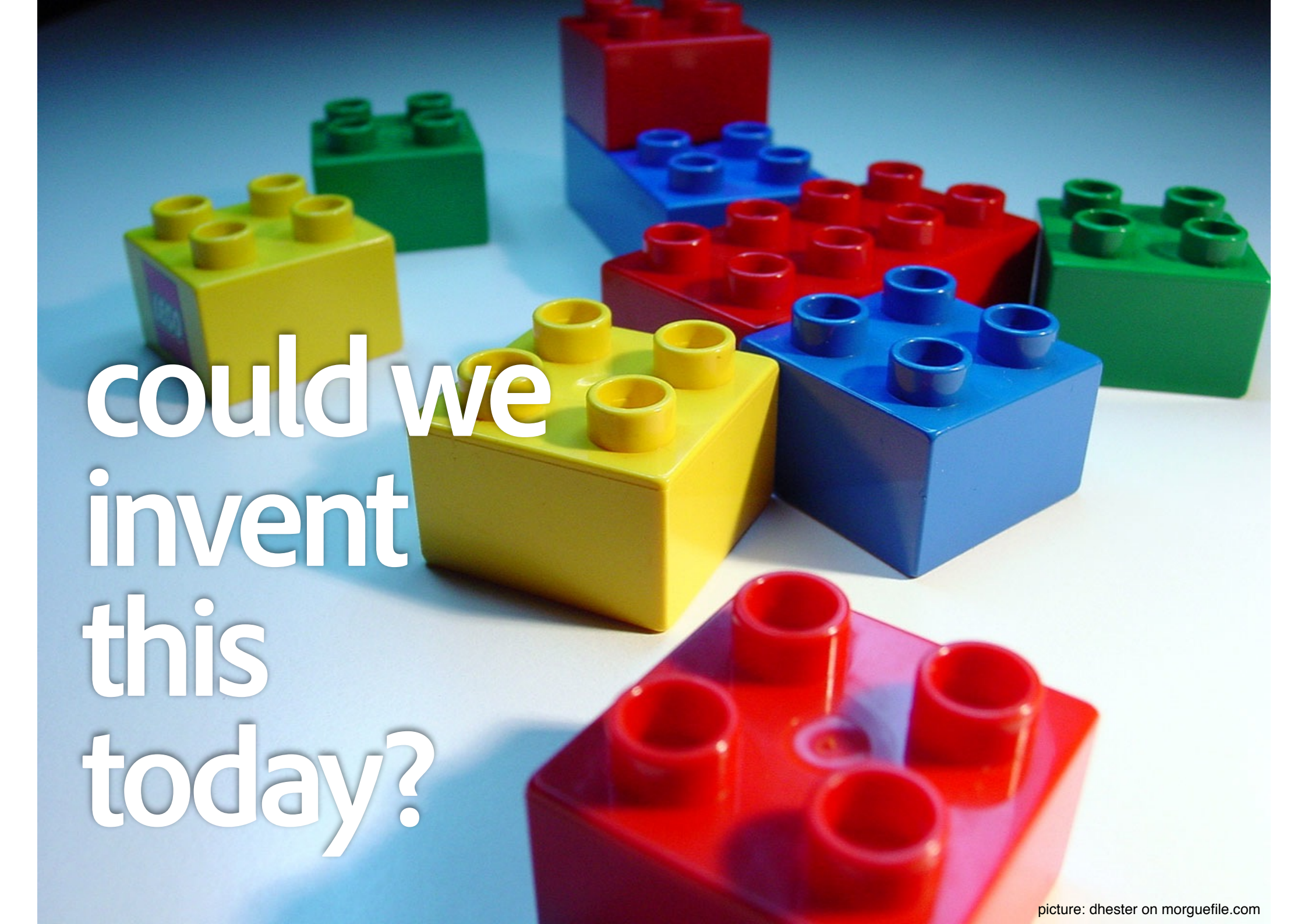
June 2014
slides revision 2014-06-18



looking for answers?

wrong place!

I'm more about questions today...



could we
invent
this
today?



beautiful simplicity

as simple as possible, but not simpler

(to be precise, it's a Victorinox skipper knife)

a
story
of
simplicity

(two stories, actually)

```
s = UDP socket
```

```
While (s is open) {
```

```
  Wait for packet
```

```
  Packet matches our filter?
```

```
  If not > continue
```

```
  If yes:
```

```
    Compute storage path from T
```

```
    Apply parity to storage path
```

```
}
```

26 lines of code

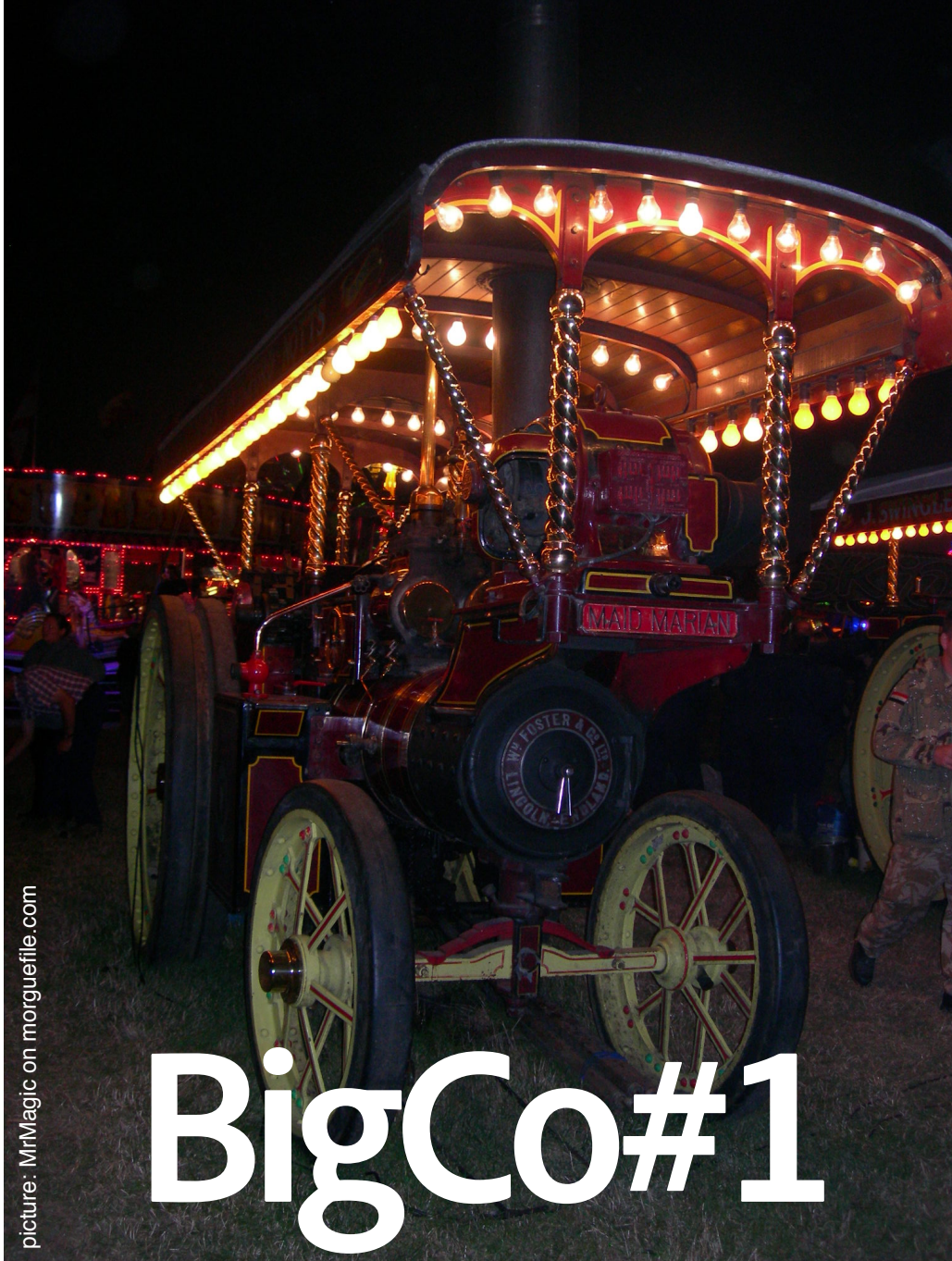
3 months of work

(happily chugging along since 1999)

**record digital audio
continuously**

**cannot lose more
than 15 seconds**

(remember - 1999)



picture: MrMagic on morguefile.com

BigCo#1

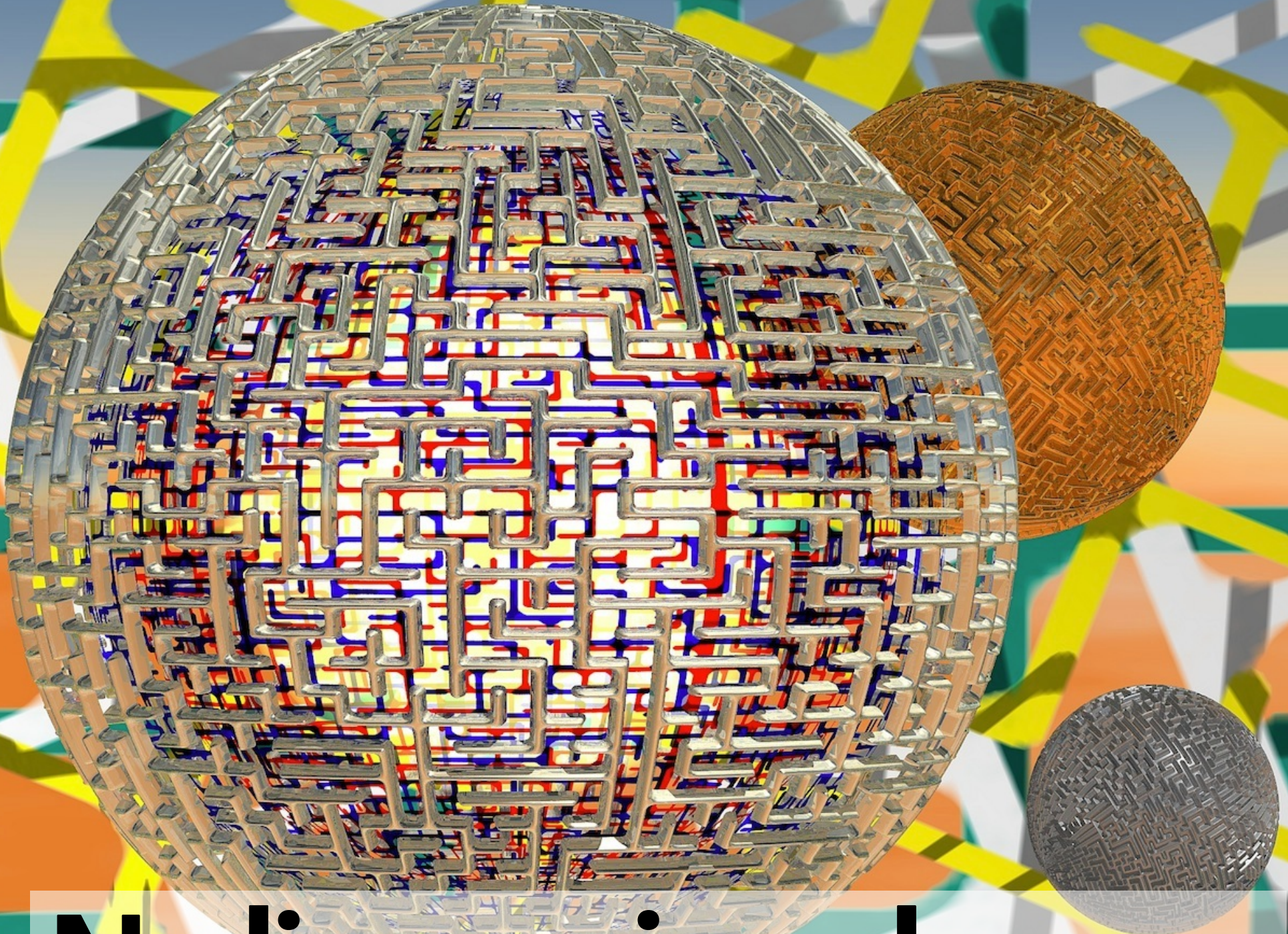


picture: RoganJosh on morguefile.com

BigCo#2

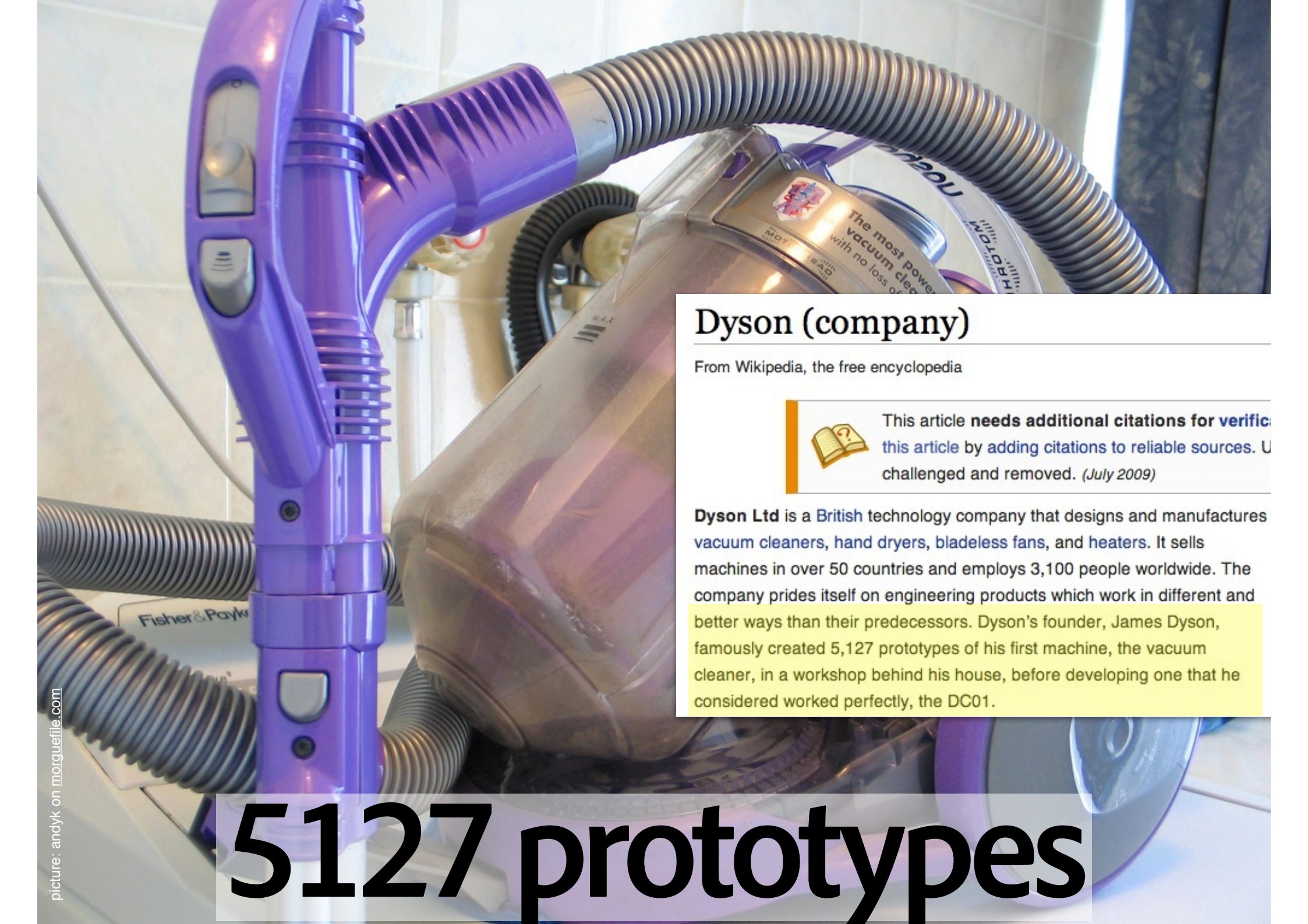
options?

picture: pschubert on morguefile.com



picture: RoganJosh on morguefile.com

N-dimensional maze



Dyson (company)

From Wikipedia, the free encyclopedia



This article **needs additional citations for verification** **this article by adding citations to reliable sources.** Unresolved references have been **challenged and removed.** *(July 2009)*

Dyson Ltd is a **British** technology company that designs and manufactures vacuum cleaners, hand dryers, bladeless fans, and heaters. It sells machines in over 50 countries and employs 3,100 people worldwide. The company prides itself on engineering products which work in different and better ways than their predecessors. Dyson's founder, James Dyson, famously created 5,127 prototypes of his first machine, the vacuum cleaner, in a workshop behind his house, before developing one that he considered worked perfectly, the DC01.

5127 prototypes

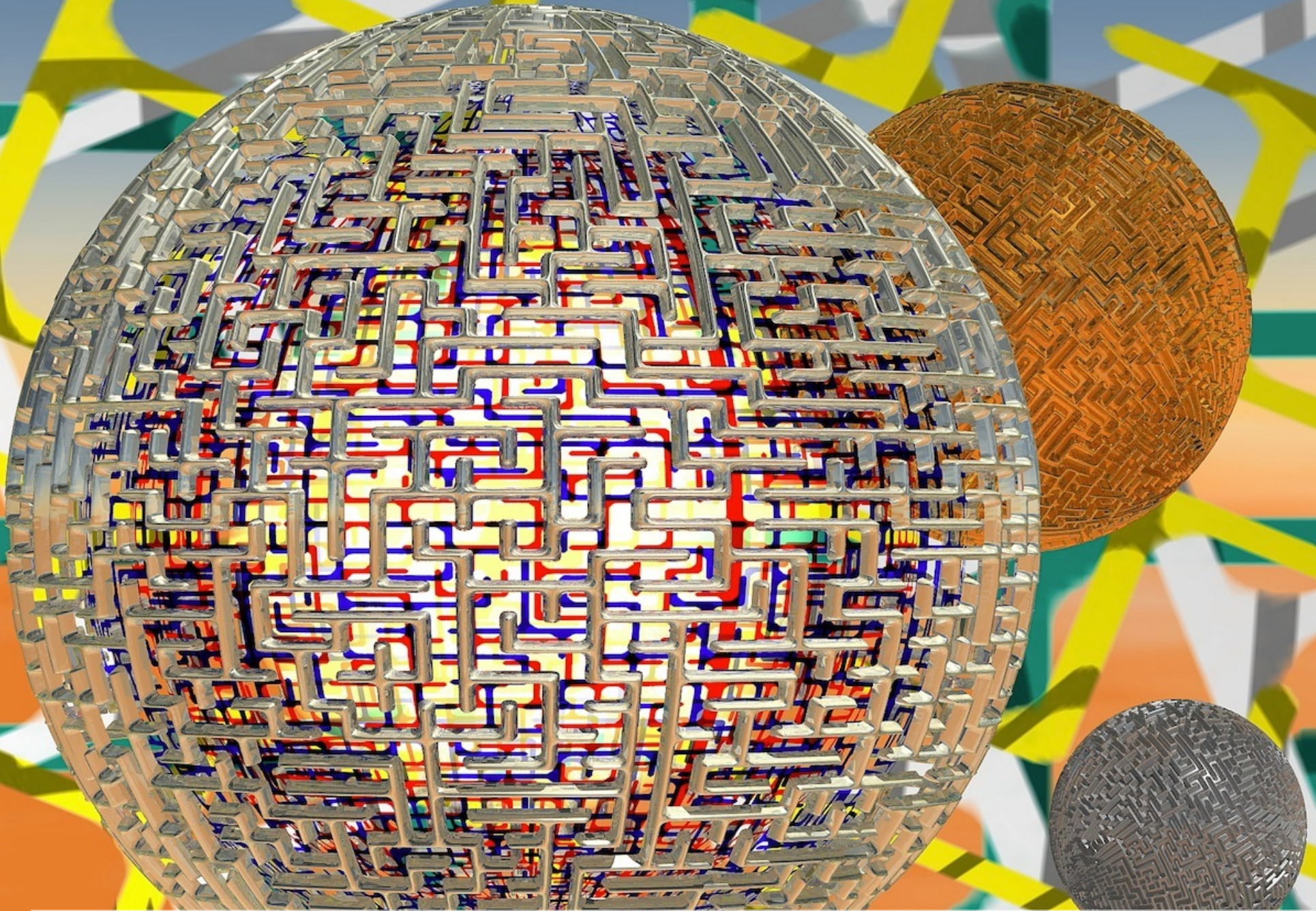


Both Heds know the value of patience: the overnight success of *Angry Birds* took eight years. Mikael and Niklas had

WIRED April 2011

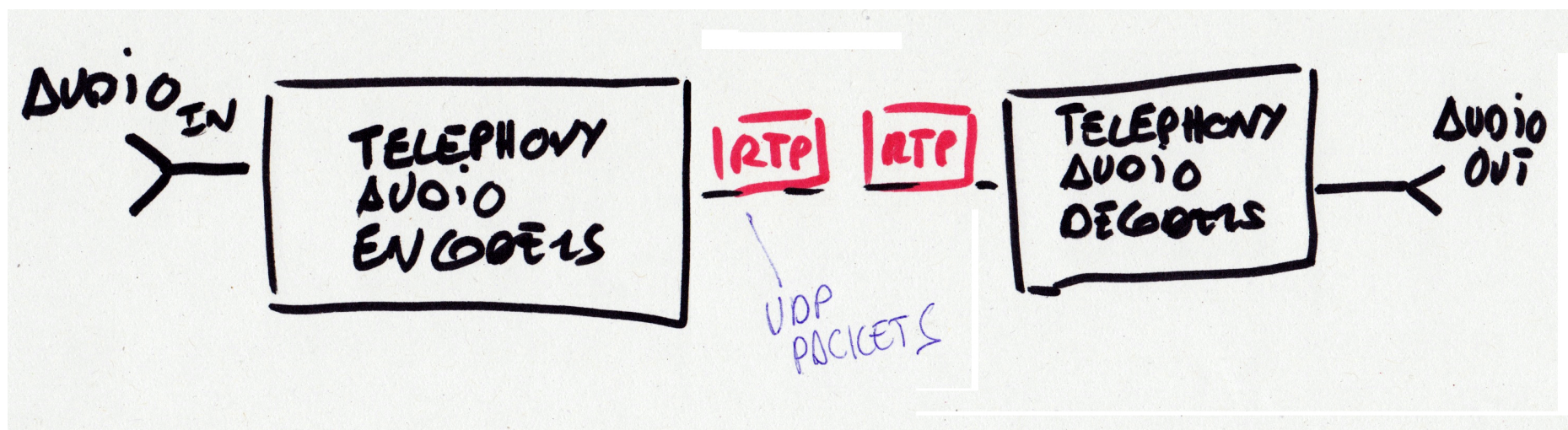
overnight? no - 8 years

picture: pschubert on morguefile.com

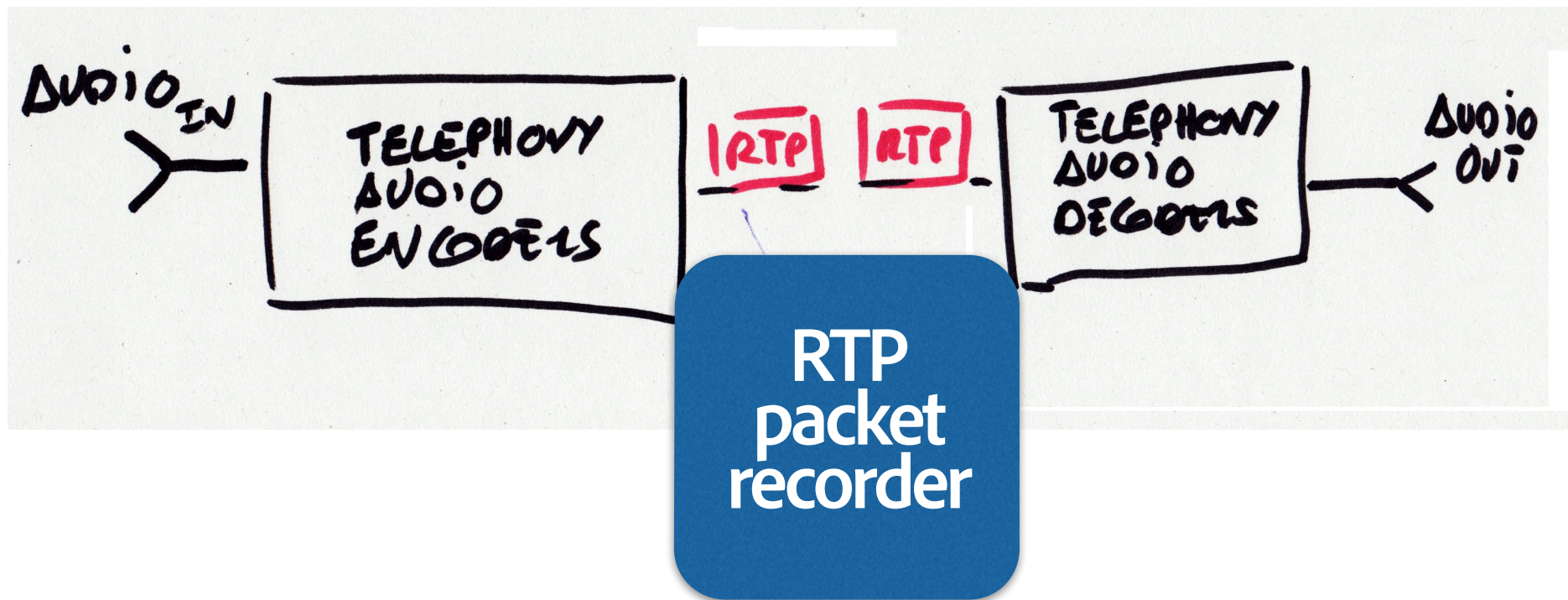


picture: RoganJosh on morguefile.com

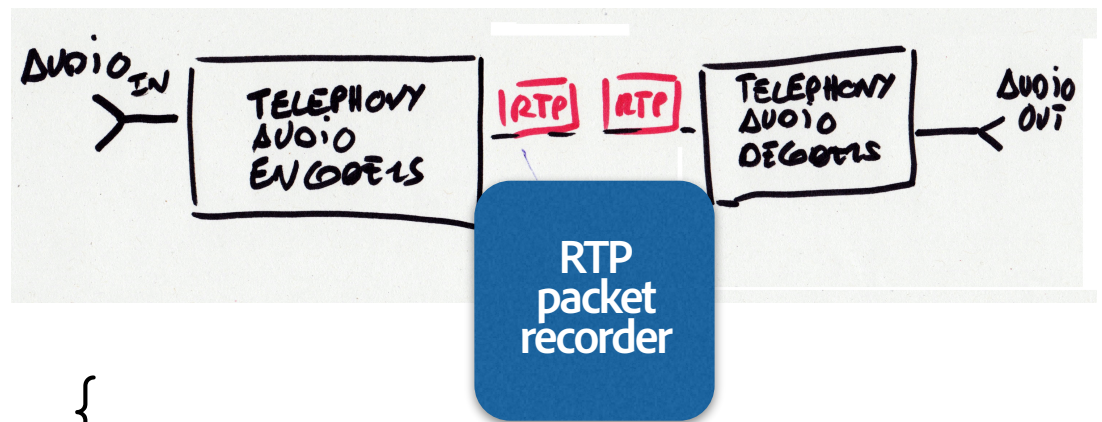
N-dimensional maze



simpler?



yes!



```
s = UDP socket
```

```
While (s is open) {
```

```
    Wait for packet
```

```
    Packet matches our filter?
```

```
    If not -> continue
```

```
    If yes:
```

```
        Compute storage path from T
```

```
        Append packet to storage file
```

```
}
```

26 lines of code
3 months

if it's not simple enough yet

do not give up



RTP
packet
recorder

storage?

continuous storage

seek by timestamp

variable speed replay

100% robust

storage?

picture: jusben on morguefile.com

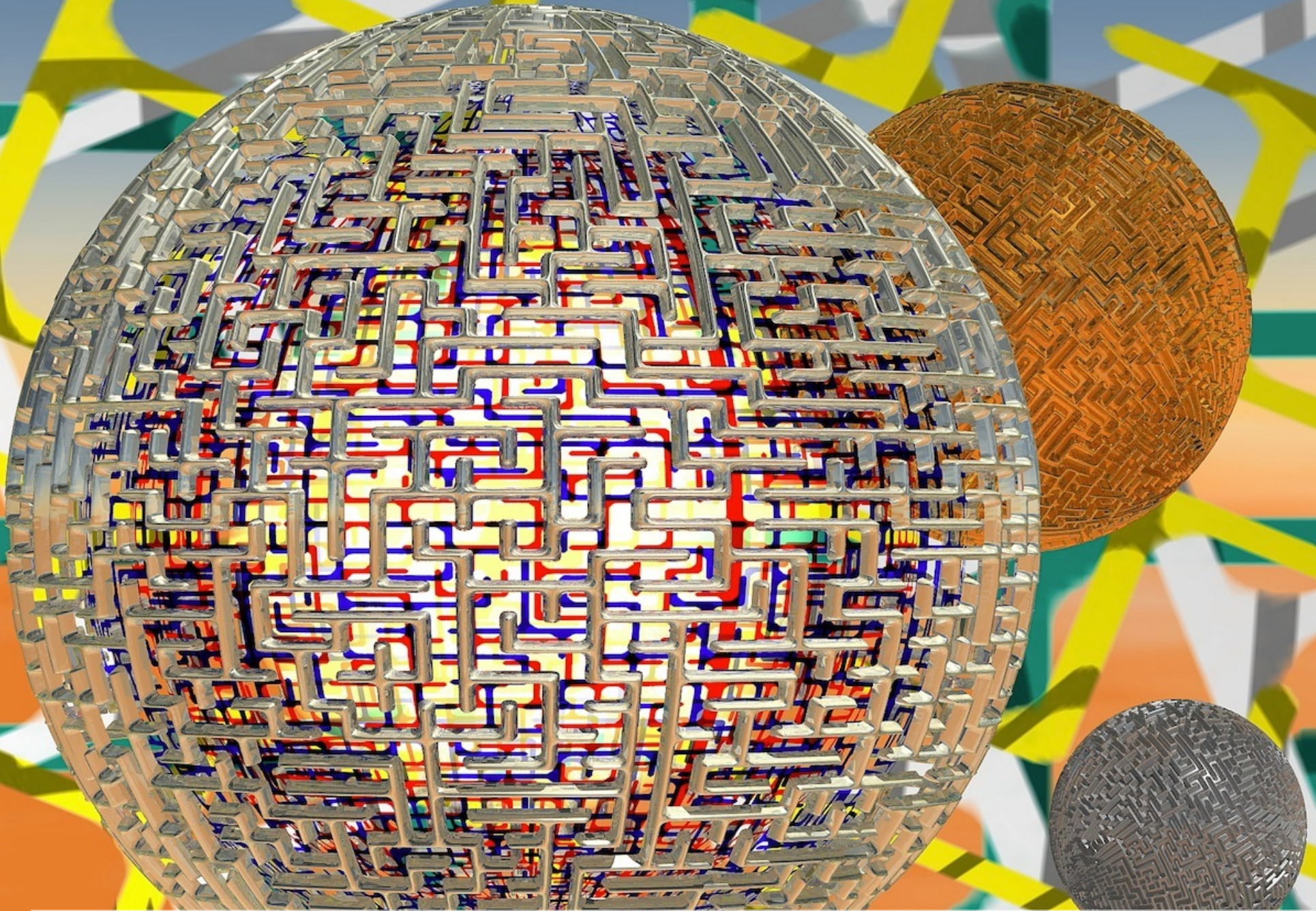
enterprise DB!

CHOICE

2323666
NIJMEC



picture: pschubert on morguefile.com



picture: RoganJosh on morguefile.com

N-dimensional maze

2014/06/25/1402.rtp

|RTP| |RTP| |RTP| |RTP| |RTP| |RTP|

timestamp-addressed file stores 15 seconds of RTP packets

RTP
packet
recorder

storage!



RTP
packet
recorder

storage



```
s = UDP socket
While(s is open) {
  Wait for packet
  Packet matches our filter?
  If not -> continue
  If yes:
  Compute storage path from T
  Append packet to storage file
}
```

continuous recording
continuous storage
seek by timestamp
variable speed replay



beautiful simplicity

as simple as possible, but not simpler



simple modules
simple assembly model
transparent, robust, powerful

beautiful simplicity

unix pipelines

ok, but

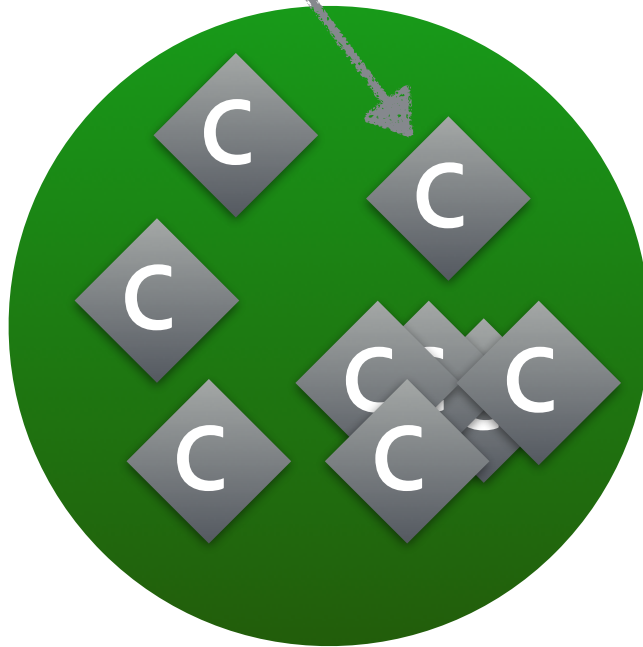
high-end CMS?

**it's
just a
Web
server...**

HTTP request

dispatcher

processor



client

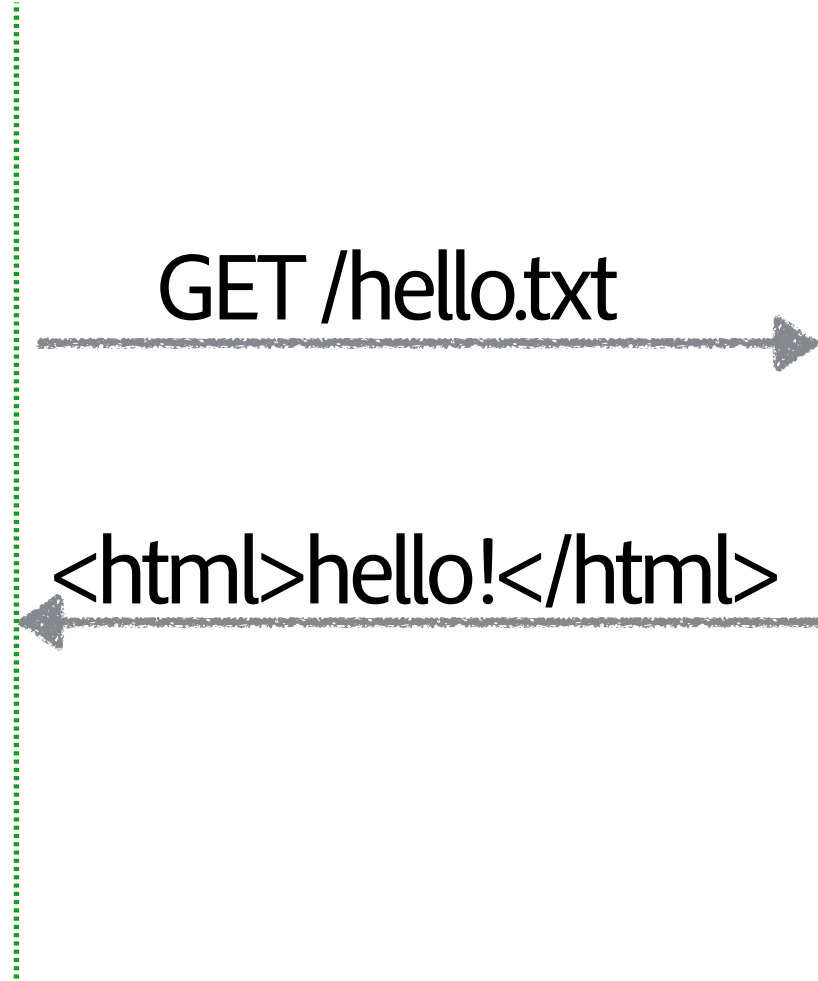
server

GET /hello.txt

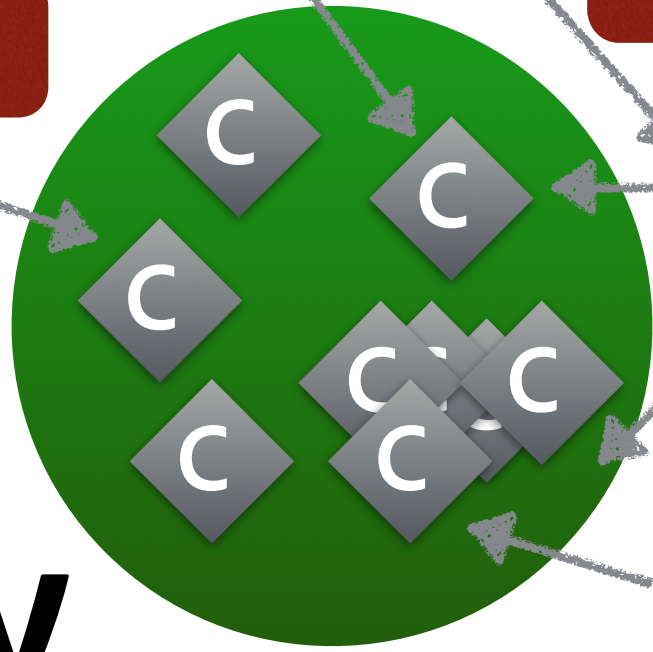
<html>hello!</html>

HTTP 0.9

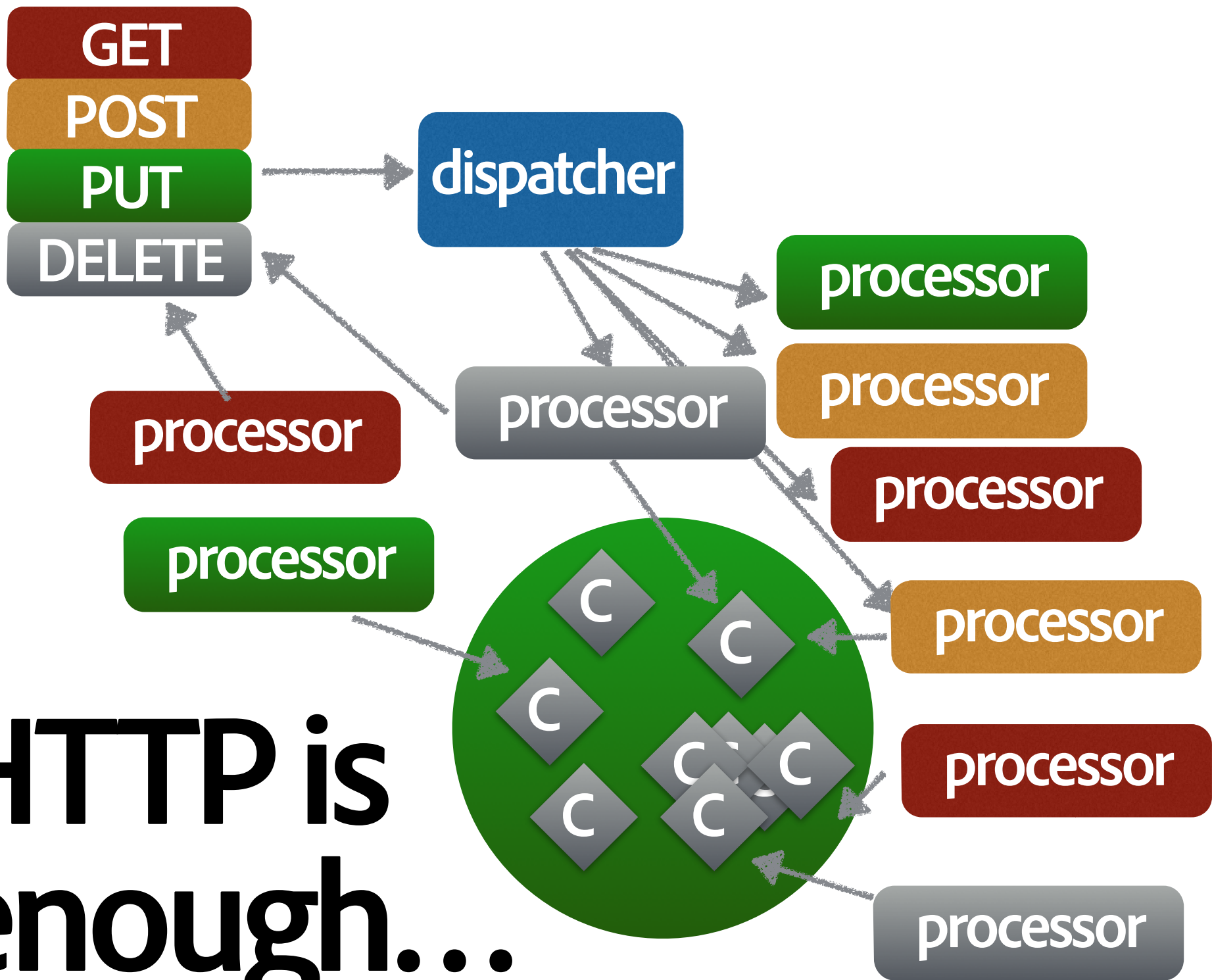
(start simple)



HTTP requests



even if it gets busy...



**HTTP is
enough...**

so,

how?

put the bar

high

do not accept extra complexity

iinvest
in simplicity

can be expensive...and worth it

chase the right

metaphor

“a network packets recorder and player”

simplicity is a

process

you usually know when you're there



beautiful simplicity

as simple as possible, but not simpler

what are the
enablers?

Adobe Experience Manager Web Console Components



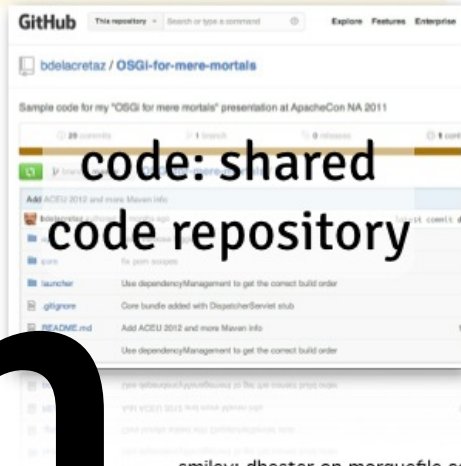
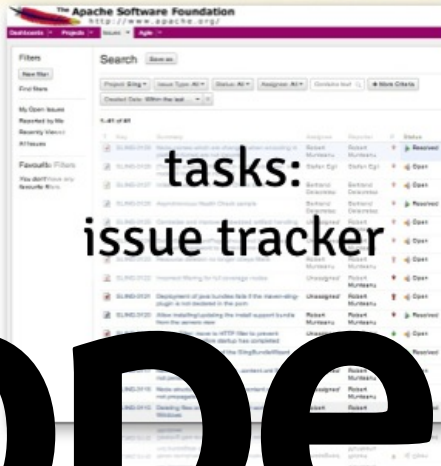
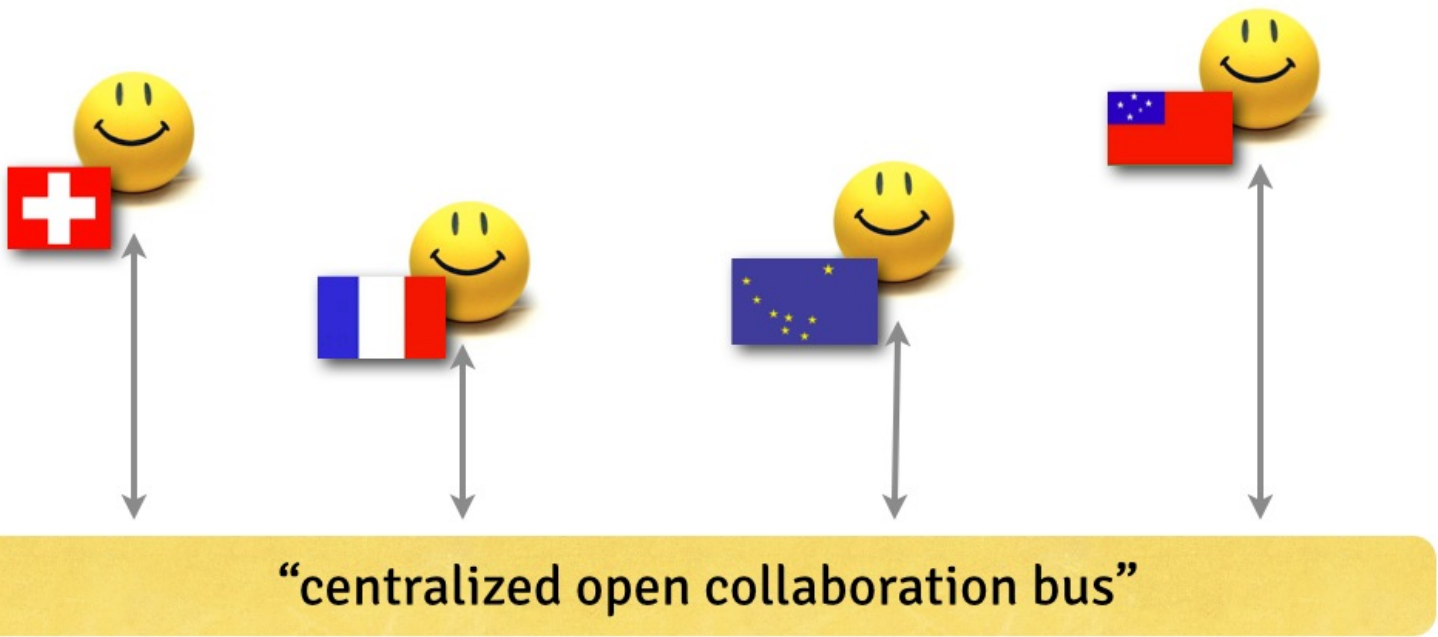
Main OSGi Sling Status Web Console

Number of installed components: 1810

| Reload | | | | |
|--------|---|------------|---------|---|
| Id | Name | Status | Actions | |
| 1152 | com.adobe.aem.formsndocuments.bootstrap.Bootstrapper | active | ■ | 🔧 |
| 1151 | com.adobe.aem.formsndocuments.events.AssetUpdateListener | registered | ■ | |
| 1160 | com.adobe.aem.formsndocuments.listeners.RnCEventsListener | active | ■ | 🔧 |
| 1150 | com.adobe.aem.formsndocuments.predicateevaluator.DateComparisonPredicateEvaluator | factory | ■ | |
| 1149 | com.adobe.aem.formsndocuments.publish.AssetReferenceProvider | active | ■ | |
| 1153 | com.adobe.aem.formsndocuments.publish.impl.PublishServiceImpl | active | ■ | 🔧 |
| 1158 | com.adobe.aem.formsndocuments.rnc.ReviewManagementServiceImpl | active | ■ | 🔧 |
| 1155 | com.adobe.aem.formsndocuments.rnc.ReviewManagerServlet | active | ■ | 🔧 |
| 1159 | com.adobe.aem.formsndocuments.rnc.RnCDeletePreprocessor | active | ■ | 🔧 |
| 1161 | com.adobe.aem.formsndocuments.rnc.RnCJcrPathBuilder | active | ■ | |
| 1157 | com.adobe.aem.formsndocuments.rnc.RnCPublishPreprocessor | active | ■ | 🔧 |
| 1156 | com.adobe.aem.formsndocuments.scheduler.FormActivationScheduler | active | ■ | 🔧 |
| 1154 | com.adobe.aem.formsndocuments.service.impl.FMCRUDServiceImpl | active | ■ | 🔧 |

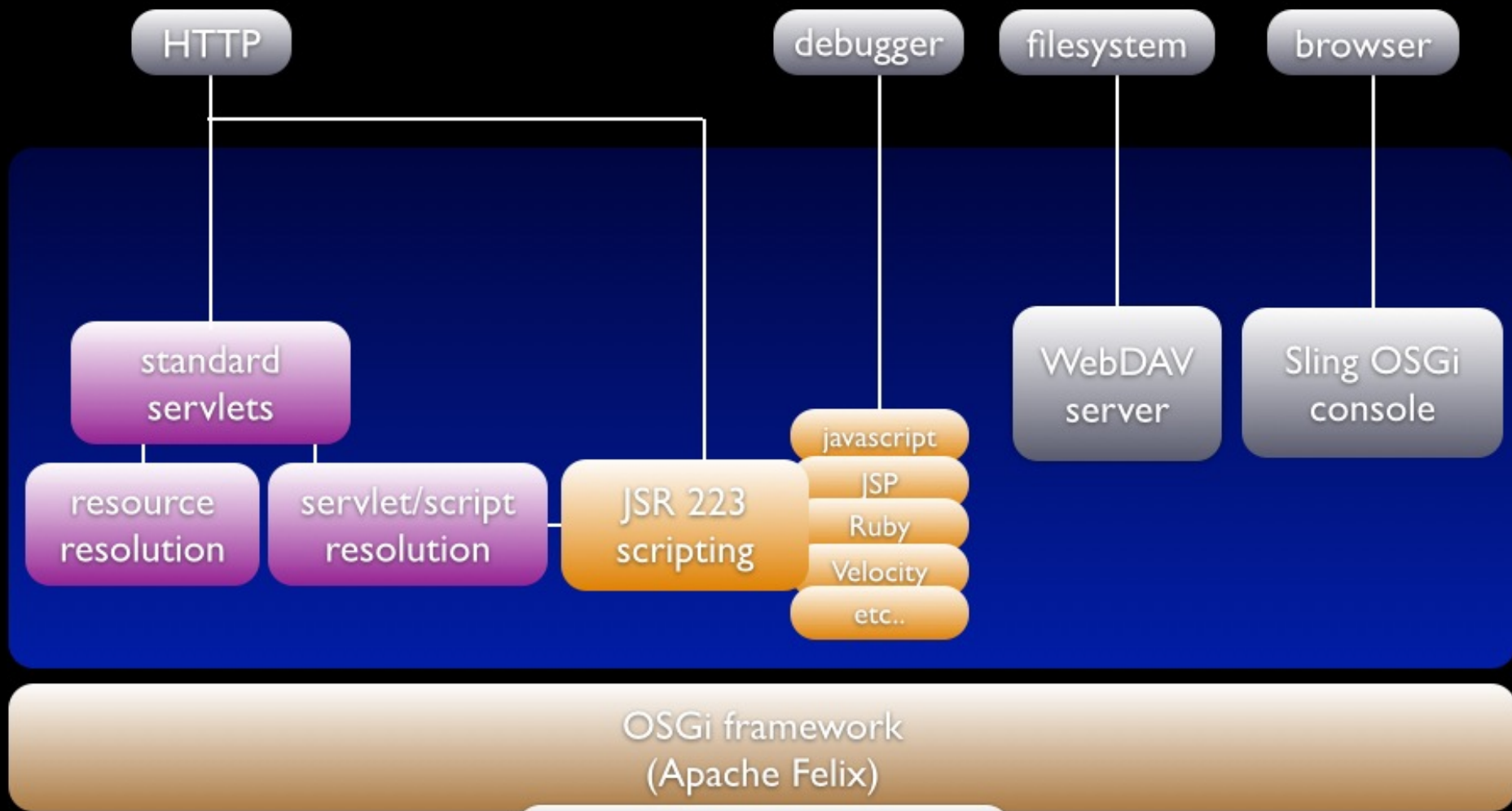
modularity

enablers



smiley: dhester on morguefile.com

enablers open development



Apache Sling

enablers

Jackrabbit Oak

the next generation content repository

Jackrabbit Oak is an effort to implement a scalable and performant hierarchical content repository for use as the foundation of modern world-class web sites and other demanding content applications.

The Oak effort is a part of the [Apache Jackrabbit](#) project. Jackrabbit is a project of the [Apache Software Foundation](#).



JCR

enablers



not simple enough?

don't give up!