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EXPONENTIAL ORGANIZATIONS

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1. Introduction
2. Definition of ExO
3. Brief history of ExO
4. Why are ExOs ten times better, faster and cheaper
5. Massive Transformative Purpose (MTP)
   -Five external attributes (SCALE)
   -Five internal attributes (IDEAS)
6. Why ExO concerns Engineering Companies
7. Risks and opportunities
8. How to manage ExO in an engineering Company
9. Conclusion
10. Discussion

What is an ExO?

An **Exponential Organization** (ExO) is one whose Impact (or output) is disproportionally large - **at least 10x larger** - compared to its peers because of the use of new organizational techniques that leverage exponential **technologies**

In 2009 the ExO **paradigm** was first identified by experts as a weak signal

After 2 years, in 2011, it was revealed that several new organizations were following a **specific model**.

Since 2011 they have been seriously researching this ExO model at the **Singularity University.**

In 2014 Salim Ismail wrote a specific book called “Exponential Organizations” and this new paradigm has assumed a **central role** in the **modern** economy.

SINGULARITY UNIVERSITY

NASA research park, CA (U.S.)

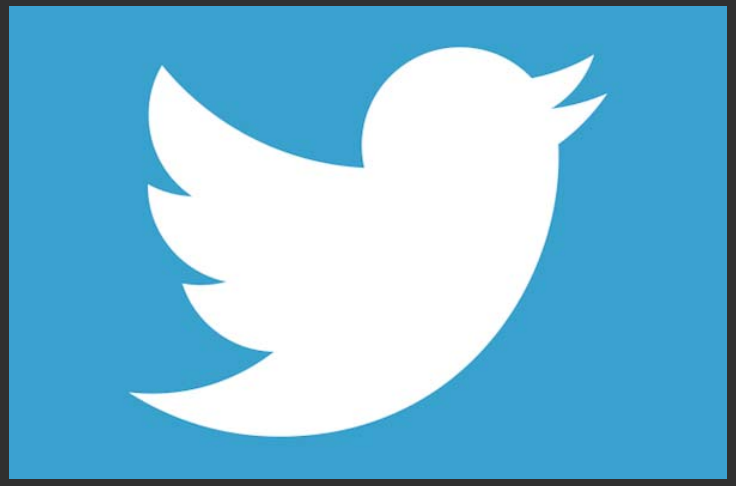
"Our mission is to **educate**, **inspire** and **empower** leaders to apply exponential technologies to address **humanity's grand challenges**."

Singularity University is a benefit corporation based in San Francisco that provides educational programs, innovative partnerships and a startup accelerator to help individuals, businesses, institutions, investors, NGOs and governments understand cutting-edge technologies, and how to utilize these technologies to positively impact billions of people.

Amazon, Twitter, eBay, Booking.com and Apple's iTunes have disrupted their relative markets such as bookstores, newspapers, local stores, travel agencies and record stores.



~~Book stores~~



~~Newspapers~~

ebay

~~Local stores~~

Booking.com

~~Travel agencies~~



~~Record stores~~

“Every single job function we can identify is being fundamentally **transformed**…
… Even old industries such as **construction** are in the throes of **disruption**.”

- David Rose – Angel investor

Significant transformations to this industry Include:

- **Increased collaboration**
- **More sophisticated design software (BIM)**
- **3D Printing**

Mike Halsall – Construction company executive

Halsall estimates that the sum of these disruptions could **reduce** the number of people working in **construction** by MORE than **25% within 10 years**.

1975

Sasson showed first **digital camera** device to his bosses at **Kodak**.

At the time, it took 50 milliseconds to capture the image but 23 seconds to record it to tape.



If your employee came to you in **1975** and told you he'd invented the **digital camera**, what would you do?
If you were **Kodak**, the answer was to effectively shove him in a closet and hope the product never reached the mass market.

His bosses were unimpressed. "**They were convinced that no one would ever want to look at their pictures on a television set.**"





But actually everybody wanted to look at their pictures on a smartphone

2012



3 years in business
13 employees



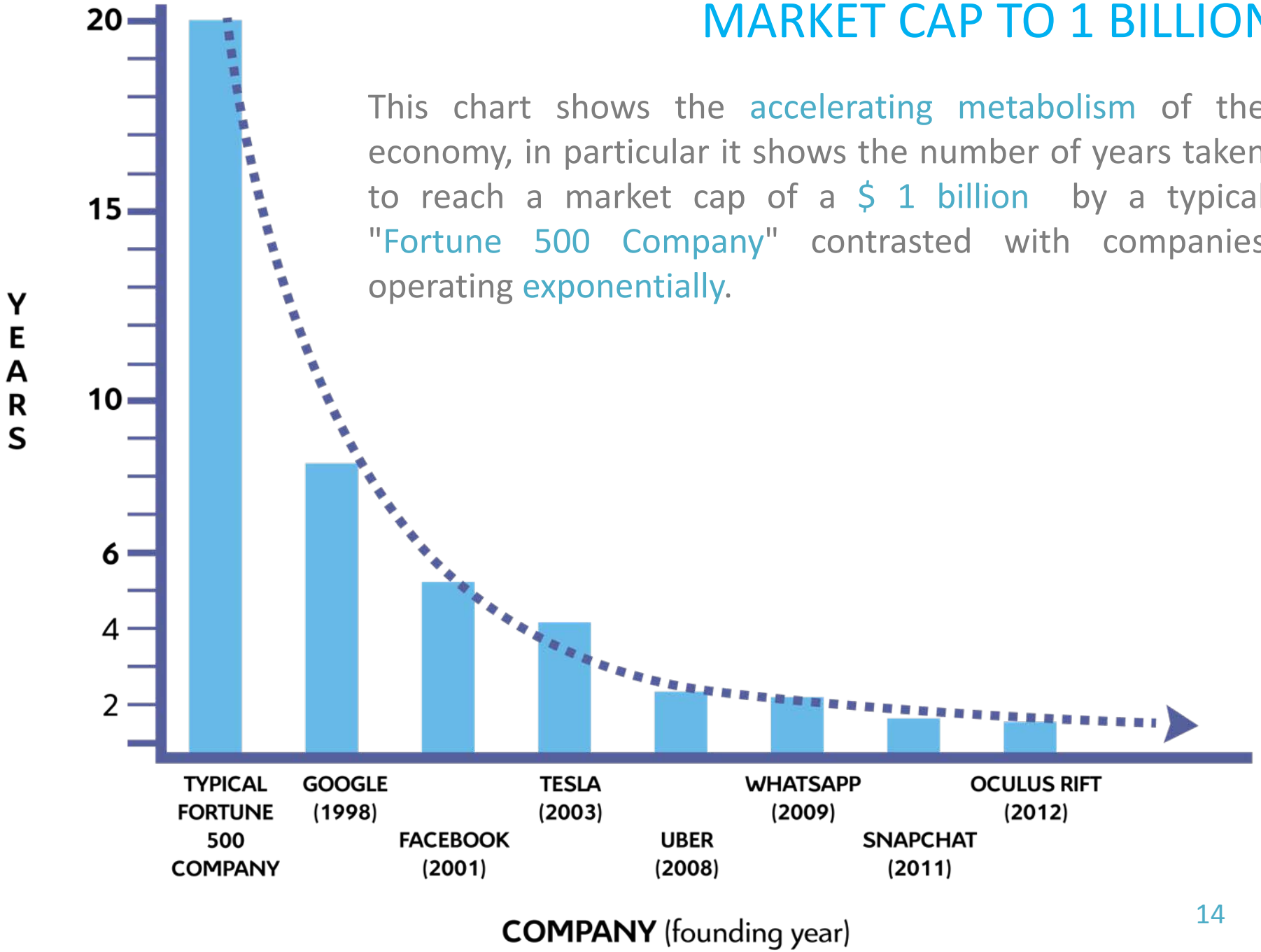
Facebook bought
Instagram for
$1 BILLION



In the meantime…

MARKET CAP TO 1 BILLION

This chart shows the accelerating metabolism of the economy, in particular it shows the number of years taken to reach a market cap of a $ 1 billion by a typical "Fortune 500 Company" contrasted with companies operating exponentially.



Rey Kurzweil Identifies a **Right Fundamental Observation**:

"When you shift to an **information-based** environment, the pace of development jumps onto an **exponential growth path**, and price/performance **doubles** every year or two."

Rey Kurzweil, Singularity University co-founder

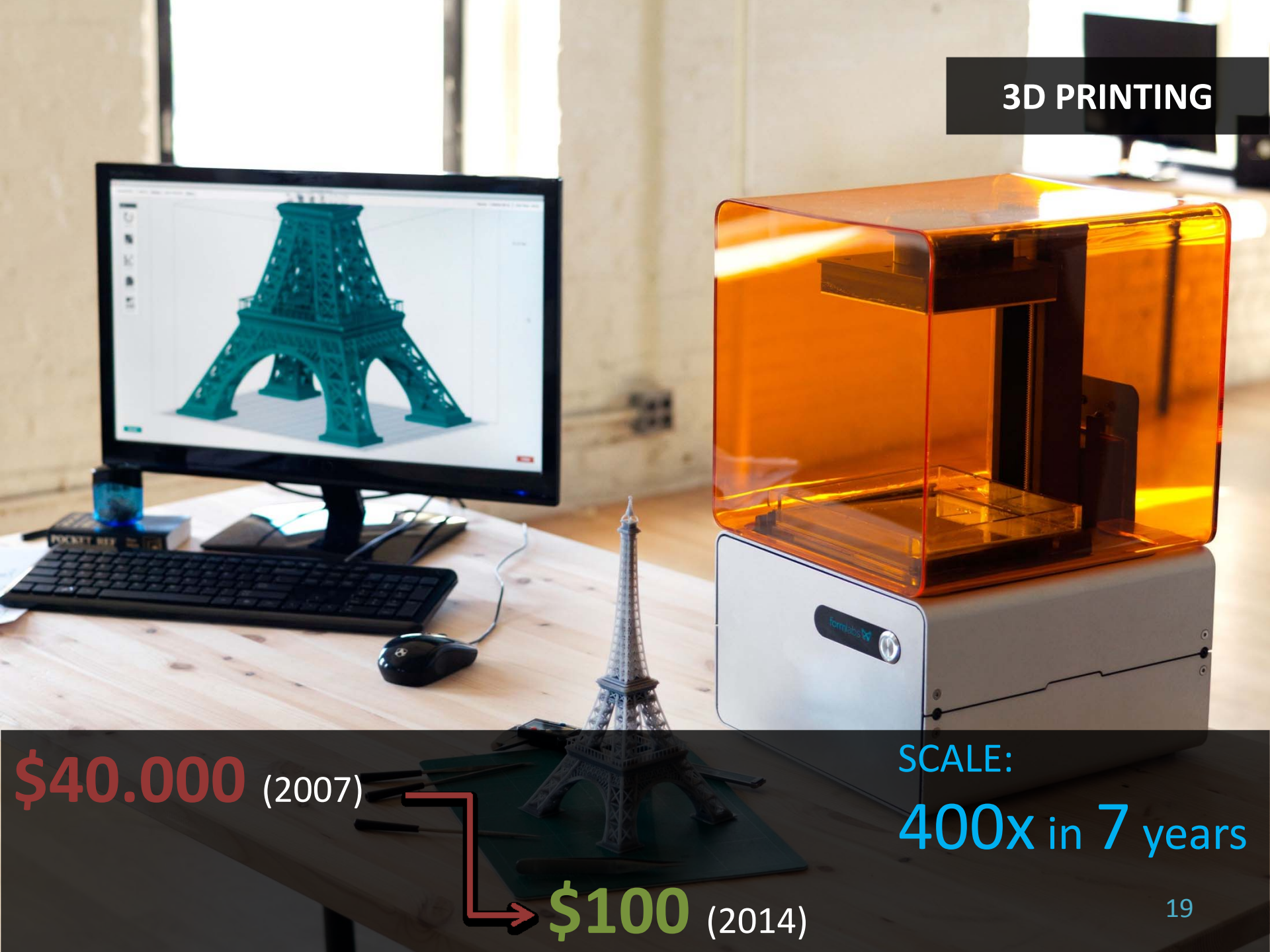
Mead’s Law

“If the amount of computer power for a given cost doubles every two years, then the cost of computing power must halve over the same period”

Economy of Abundance

Everything that bits touch is also touched by their unique economic properties—cheaper, better. faster.


DNA SEQUENCING
$2.7 B (2000)
$100.000
(2011)
$100 (2014)
1P (2020)



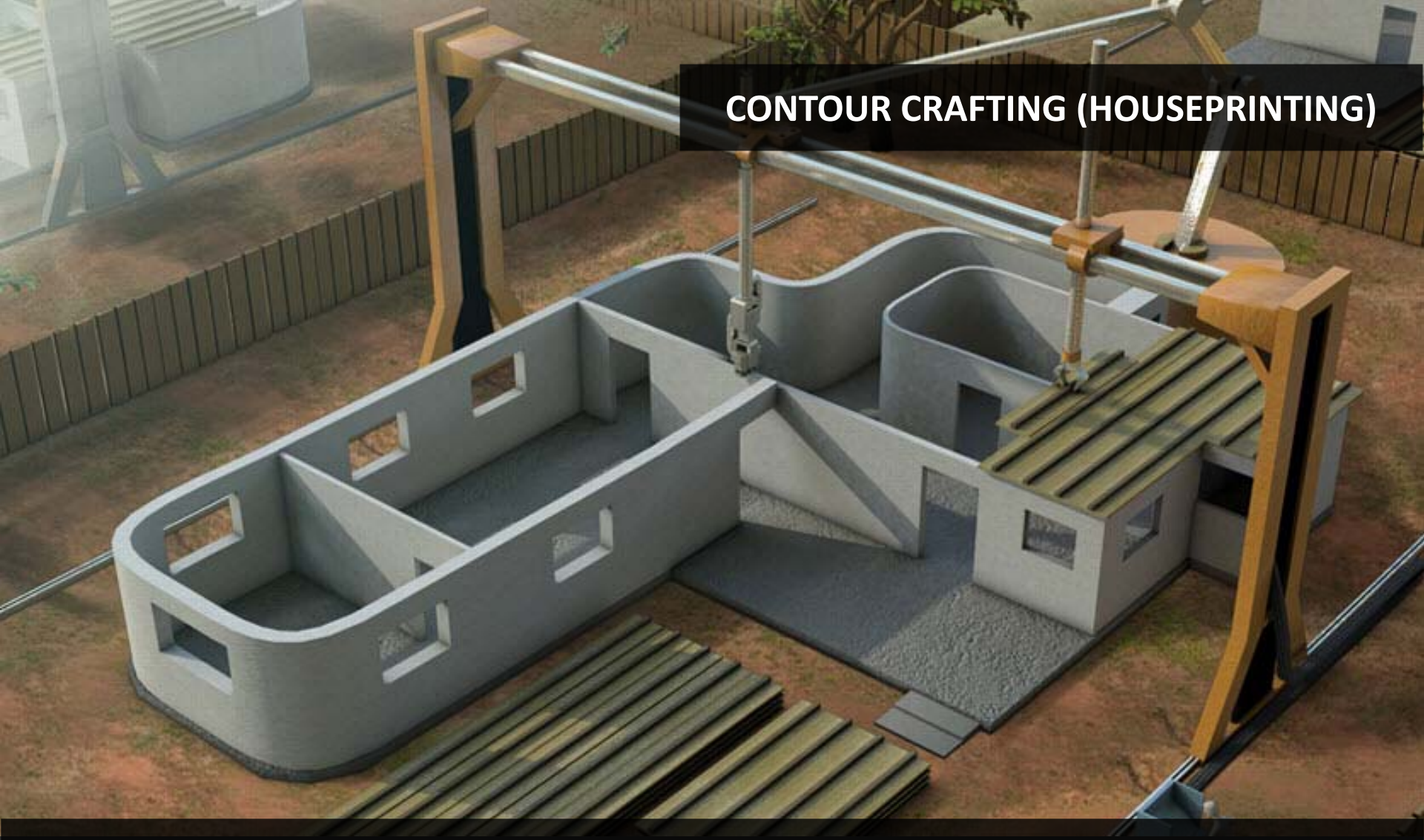
3D PRINTING

$40.000 (2007)

$100 (2014)

SCALE:

400x in 7 years



PREDICTED A 60% COST REDUCTION



ENGINEERING SERVICES

IN ITALY: 2013 → -40% 2015 → - ? % 2020

In Italy From 2013 to 2015 the value of Engineering services dropped by 40% . Considering the "3D printing of a building, using Open Source processes ", and the rise of "Collaborative Commons " it is easy to understand the future of the cost of engineering services.

Recently, *Peter Diamandis* has begun to teach what he calls the 6Ds. Any technology that becomes Digitized enters a period of exponential growth.



Peter Diamandis

Co-founder of Singularity university
XPrize CEO and Chairman

DIGITIZED → **DECEPTIVE**
(INFORMATION TECH)

DISRUPTIVE

DEMATERIALIZE

DEMONETIZE

DEMOCRATIZE

Now, after 20 years, ALL of these fit in your pocket…

… and come for free on your smartphone!



The final step is Democratization.
Today a kid in his garage can upload an App onto a few key platforms reaching potentially 2 Billion people.
The ability to touch humanity has been democratized .



Exponential Organizations leverage external resources to achieve their objectives.
For example, they maintain a very small core of employees and facilities, allowing enormous flexibility as margins soar.

Our organizational structures have evolved mainly to manage **scarcity** of people, money and assets / resources

The concept of **ownership** works well for scarcity.

Accessing or sharing works better in an abundant, Information – based world.

Traditional organisational structures, designed over the last hundred years to manage physical assets or people, are rapidly becoming **obsolete**.

To compete in our rapidly changing world, we need a new kind of organsation, one that is not only able to manage this change, but also thrive on it.

Exponential Organizations have the capability to adapt to this new world of deep and ubiquitous information and convert it into a competitive advantage.
The ExO, is in fact the appropriate commercial response to our exponential new world.

A traditional consumer packaged goods company takes up to **300 days** to move a new product from invention to retail store shelves. This is considered blistering pace.

Quirky is an ExO in the consumer packaged goods Industry. It accomplishes this same cycle in only **29 days**.

airbnb

Founded in 2008

-1.400 Employees

-500.000 listings in 33.000 cities

-NO physical assets

Value: **$10 BILLION**

This is **MORE** than

HYATT®

Hotels and resorts

-45.000 Employees

-550 properties


airbnb


GitHub




Google


TESLA


VALVE


Quirky


UBER


NETFLIX


waze

Let's now examine the major characteristics of ExOs. Like the human brain the right hemisphere manages Creativity, Growth and Uncertainty while the left focuses on Order, Control and Stability.

ExO = MTP + SCALE + IDEAS

5 **External** Attributes

M T P

MASSIVE TRANSFORMATIVE PURPOSE

5 **Internal** Attributes

I
D
E
A
S



S
C
A
L
E

Order
Control
Stability

Creativity
Growth
Uncertainty

MTP is the **highest**, **aspirational purpose**
of the organization, capturing the hearts and minds
of those both inside and (especially) outside
the organization.

TED "Ideas worth spreading"

"Organize the world's information" 

Quirky "Make inventions accessible"

ExO = MTP + SCALE + IDEAS

M T P

MASSIVE TRANSFORMATIVE PURPOSE

Interfaces

Dashboards

Experimentation

Autonomy

Social Technologies



Order
Control
Stability

Creativity
Growth
Uncertainty

Staff on demand

Community & Crowd

Algorithms

Leveraged assets

Engagement

Why does ExO concern Engineering Companies?

Because The confluence of breakthrough Technologies

-BIM, Cloud Computing and 3D Printing

Crowdsourcing options

- Collaborative Commons, Internet of Things, Social Media,
- Collaborative consumption and Sharing Economy

And Crowdfunding Opportunities

create a compelling scenario for a new engineering exponential company creation.

In fact hundreds of companies are now producing physical products the way software produces information in the form of video, audio and text. It is called 3D printing and it is the «manufacturing» model that accompanies an «Internet of Things» economy.

The open source design conceives the production of goods as a dynamic process in which thousands, even millions, of players learn from one another by making things together.

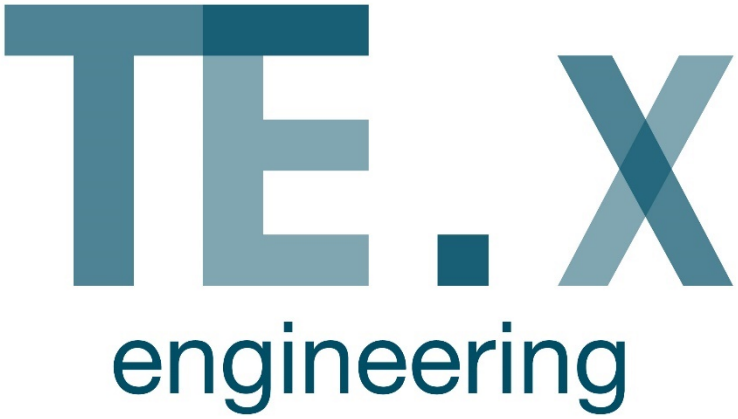
While the technology is still at the Research & Development stage, it is already clear that 3D printing of buildings will reinvent the way constructions are designed and built over the coming decades.
Engineers and architects need to be prepared for this new future standard.

Disruption is the New Norm.
In every industry, the Democratization of accelerating technologies is allowing hundreds of startups to attack and disrupt traditional markets.

And while of course many newcomers won't succeed, their sheer number means that plenty will be around long enough to create a **revolution**.

Today if you are not disrupting yourself, someone else is;
our future Outcome is to be either
disrupter or disrupted.

There is no middleground.



MTP:

“Collaborative Engineering, a revolution for the benefit of humanity”

Our community: COLLENGWORLD

THE WORLD OF
COLLABORATIVE
ENGINEERING

MANIFESTO



Our CORE TEAM

1 CEO (Chief Exponential Officer)

2 Project Manager

3 Procurement manager

4 BIM manager

5 Information Technology Manager

6 Community & Social Manager

7 Staff



Our Breakthrough Idea:

Thrive in zero marginal cost Engineering

OUR Business Model:

Lean StartUP

- Immediacy
- Personalization
- Authenticity
- Findability

OUR MVP (minimum viable product):

TE.x aims to cut the internal cost of engineering services by about 50%



SCALE and IDEAS

All 10 Attributes have been implemented

Our **open platform** is being designed in order to facilitate

PEER TO PEER interactions.



ExO = MTP + SCALE + IDEAS

STAFF ON DEMAND

Heavy dependence on Staff on Demand as a creativity booster.
We've built a **fully autonomous** multidisciplinary engineering team for every **target country**.

Thanks to the **Internet**, the cost of finding and tracking outside staff drops to almost zero.

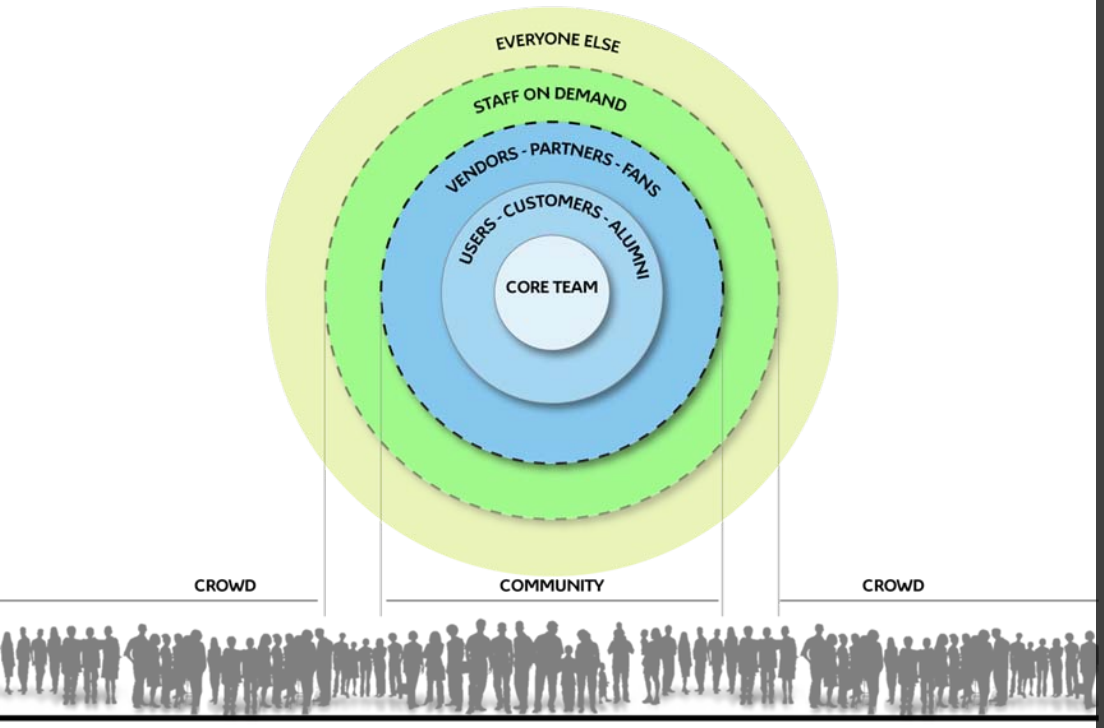
For talented workers, working on and getting paid for **multiple projects** is a particularly **welcoming** opportunity.
In **2010**, the world had **1.2 billion people** online globally. By **2020** that number will have reached **5 billion**.



ExO = MTP + SCALE + IDEAS

COMMUNITY & CROWD

TE.x leverage the entire open source community for internal work.
For an organisation or enterprise, its "community“ Is made up of :



COLLENGWORLD

The world has over a trillion hours a year of free time to commit to sharing projects and this number will triple by 2020.

As a result of both Staff on Demand and Community and Crowd, core full time employees of an organization become smaller and its flexible workforce larger.

ExO = MTP + SC**A**LE + IDEAS

ALGORITHMS

Proprietary algorithms are used (Machine Learning) to find and track multidisciplinary engineering teams and manage competitive tenders.

An analysis by the American Psychological Association of 16 studies on hiring practices found that a simple algorithm beats intuitive hiring practices by more than 25% in terms of successful hires.



ExO = MTP + SCALE + IDEAS

LEVERAGED ASSETS

Rather than own assets TE.x prefers to rent, share or leverage them.
TE.x uses cloud computing



ExO = MTP + SCALE + IDEAS

ENGAGEMENT

TE.x listens carefully to the community and crowd, which feed directly new ideas and experiments.

Competitions are also used to challenge, leverage and motivate the community in order to solicit potentially radical breakthrough ideas.

These engagement techniques are also used to find promising people in the crowd and move them into the community.



ExO = MTP + SCALE + IDEAS

INTERFACES

Using 4 people within the core organisation TE.x develops special processes and mechanisms to manage, rank, filter and engage the community in a systematic and automatic way.



ExO = MTP + SCALE + IDEAS

DASHBOARDS

TE.x monitors Objectives and Key Results (OKR).

This information is available in real time internally, via a sophisticated, adaptable and intuitive control panel.

Given the huge amounts of data, ExOs need a new way to measure and manage the organization.



ExO = MTP + SCALE + IDEAS

EXPERIMENTATION

TE.x believes strongly in interaction and short feedback cycles, especially with clients and users.



ExO = MTP + SCALE + IDE**A**S

AUTONOMY

Authority and decision - making are completely decentralized.

Teams self - organize, and the staff for any given project make the key decisions on that team's initiatives.



ExO = MTP + SCALE + IDEAS

SOCIAL TECHNOLOGIES

Internally, TE.x makes full use of social media.
Employees are encouraged to communicate through social media collaborative platforms such as Asana and LinkedIn, and to support the community organisations through these accounts.

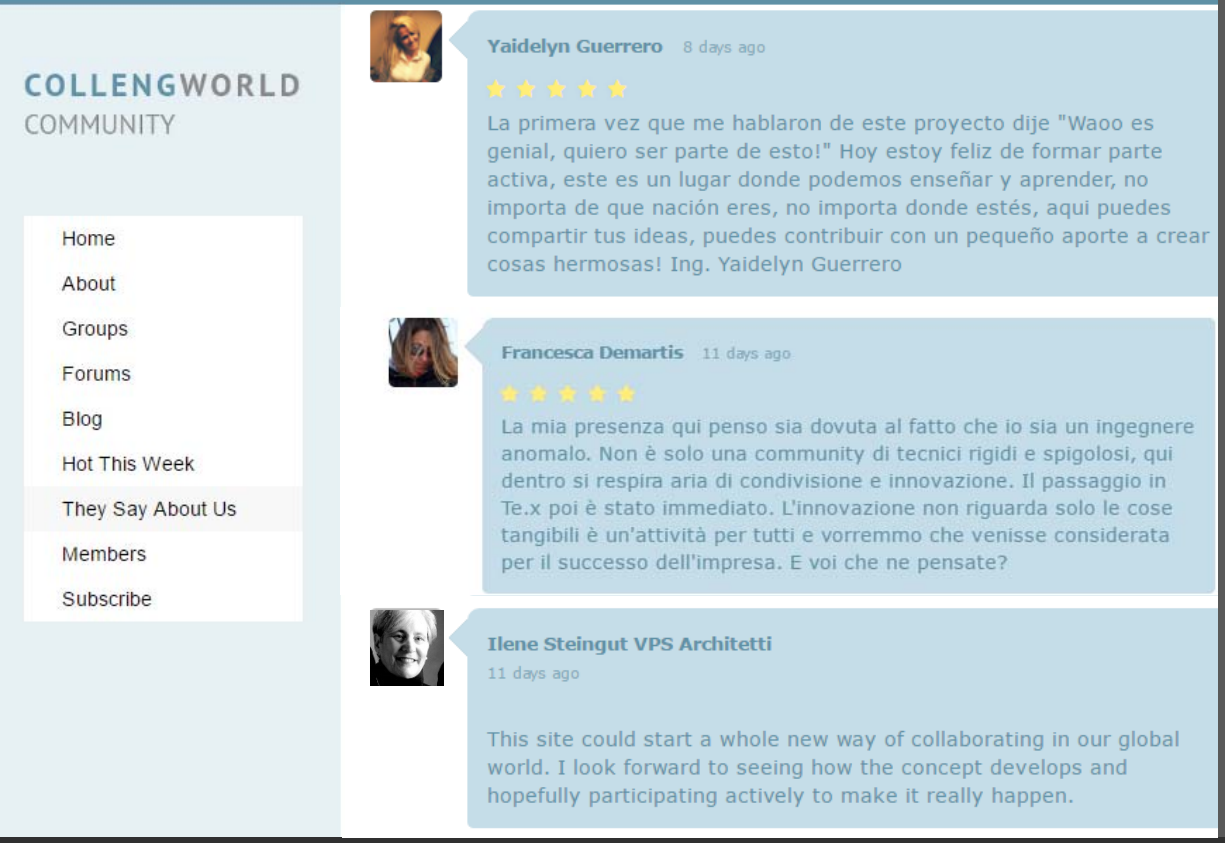
Externally TE.x, uses videoconferencing on Skype and Google Docs, in order to provide faster conversations and faster decision cycles.




Leveraged Assets
We rent rather than buying
We use on-demand assets even
in mission critical areas
SOCIAL
Algorithms
101100
01001111
0011000
Interface
Core Team
AUTONOMY
70%
Dashboards
Experimentation
AUTONOMY
AUTONOMY
Staff on Demand
We emphasize agility.
Even mission critical
functions are outsourced
as variable costs rather
than fixed costs
AUTONOMY
AUTONOMY
CROWD
Engagement
COMMUNITY
Cloud Technologies

The Exponential Organization is the **future** for any enterprise with a strong information component, which is, of course, every enterprise.
You can enter this new world now or later.
But, in the end, you will enter it.

COLLENGWORLD



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The World of Collaborative Engineering is an open source community built on collaboration, sharing, respect and transparency.

Feel free to join us on www.collengworld.com


TE.X

Thank you for your attention

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