# CyArk's Monumental Challenge

Justin Barton
Chief Technology Advocate
justin.barton@cyark.org
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## Who we are

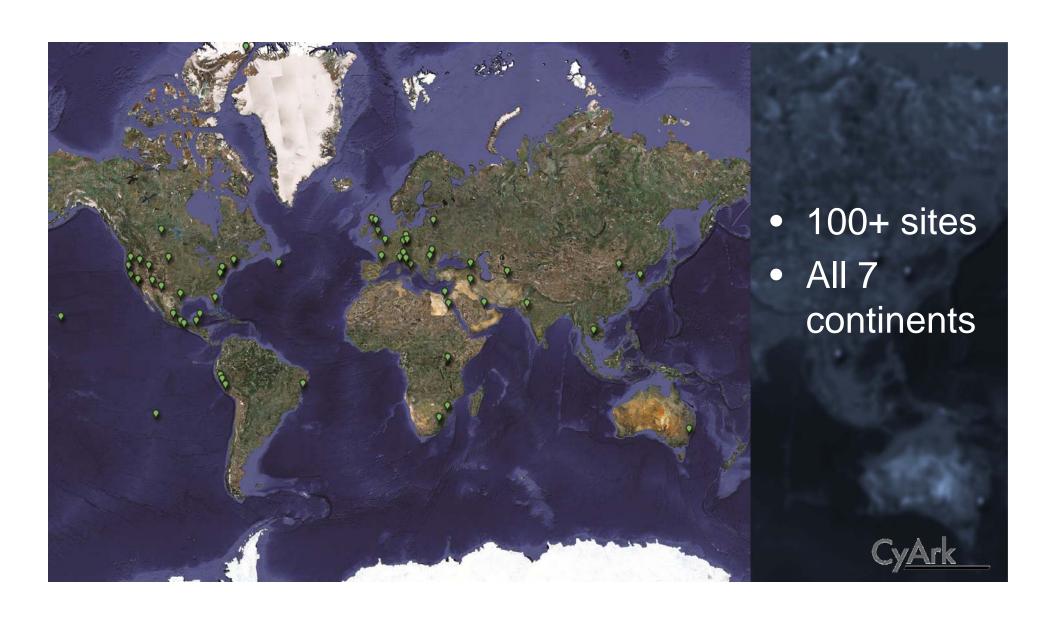
CyArk\_

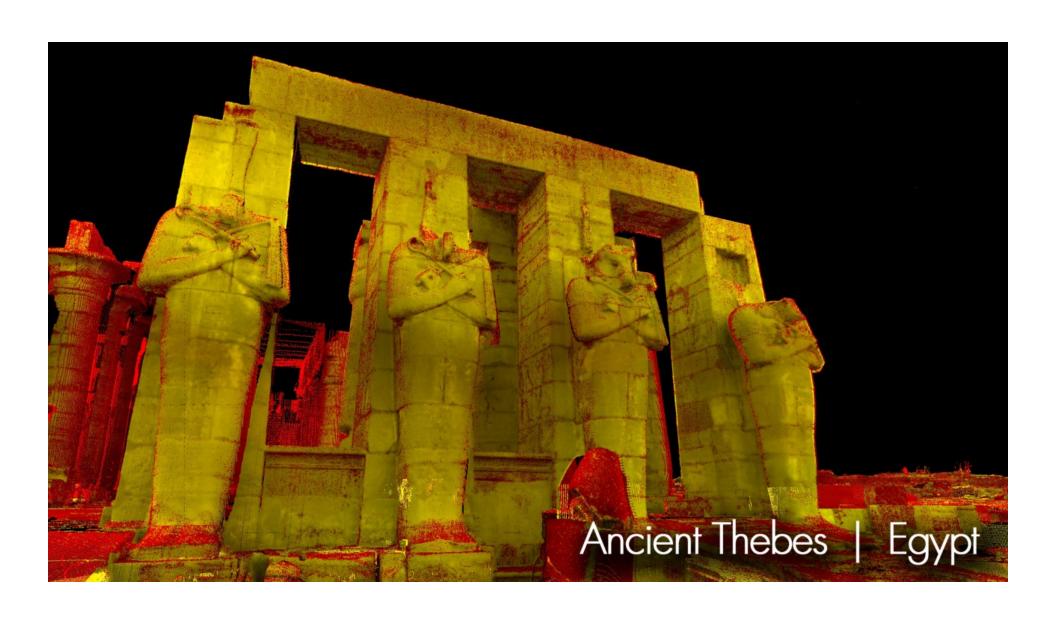
#### CyArk's Origin and Mission

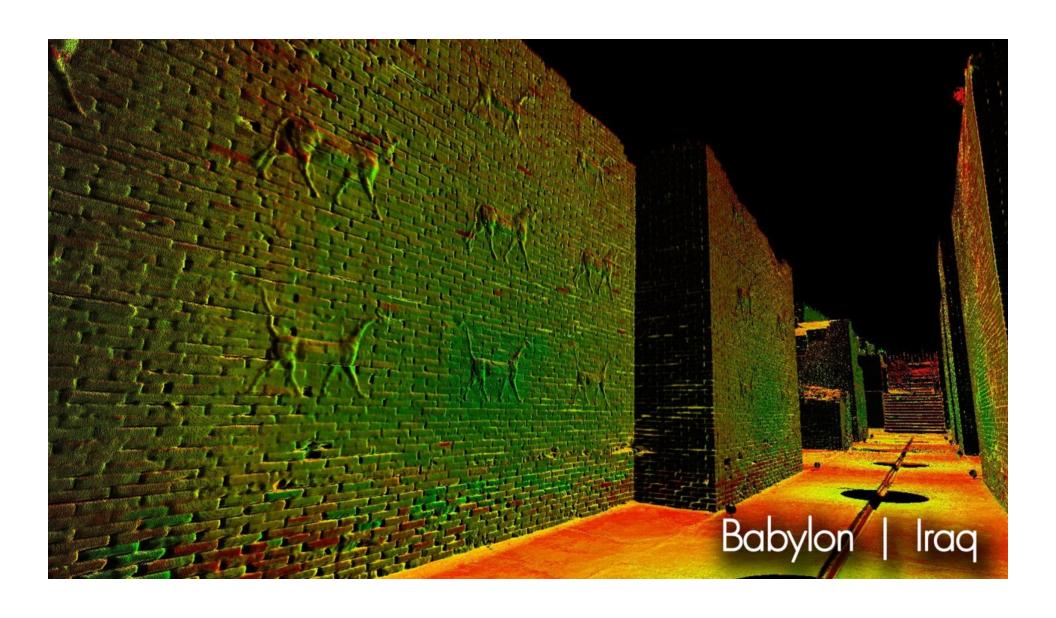
CyArk operates internationally as a 501(c)3 non-profit organization with a mission of using new technologies to create a free, 3D online library of the world's cultural heritage sites before they are lost to natural disasters, destroyed by human aggression or ravaged by the passage of time. Founded in 2003, CyArk strives to ensure heritage sites are available to future generations, while making them uniquely accessible today.



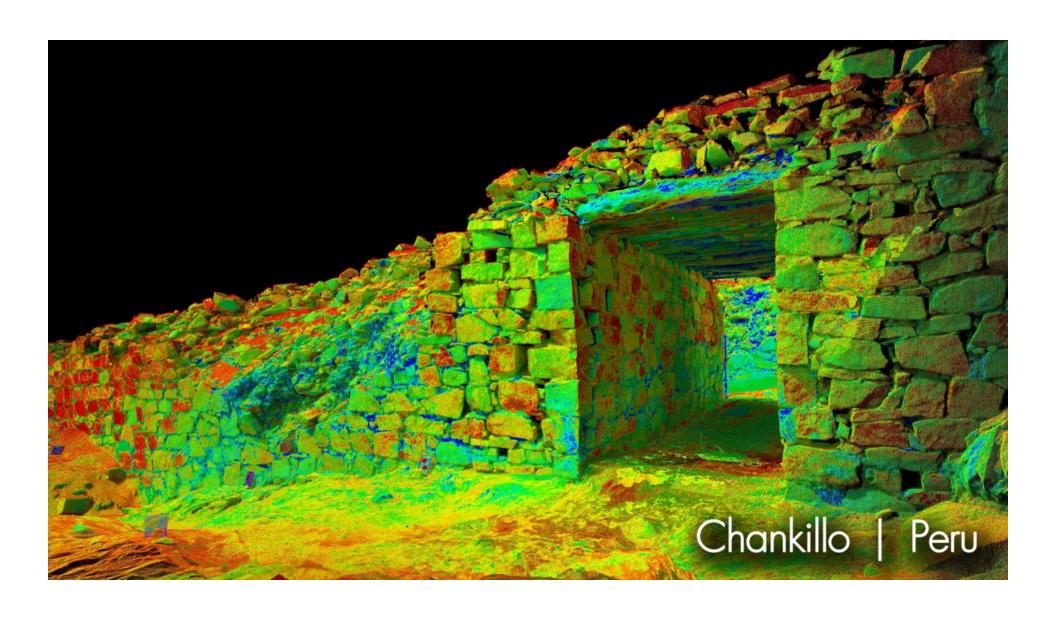




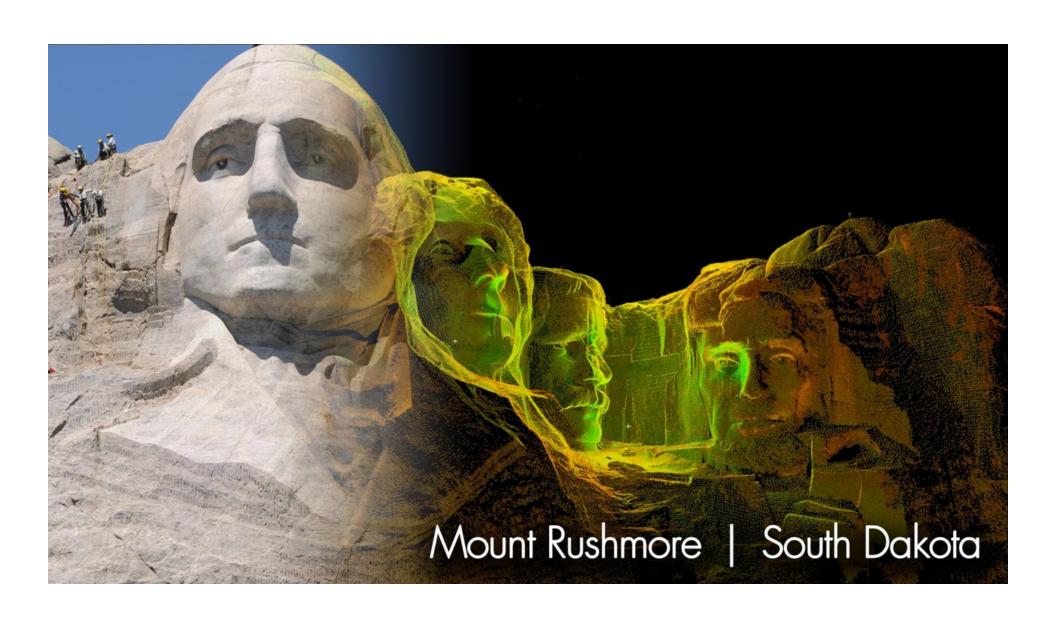




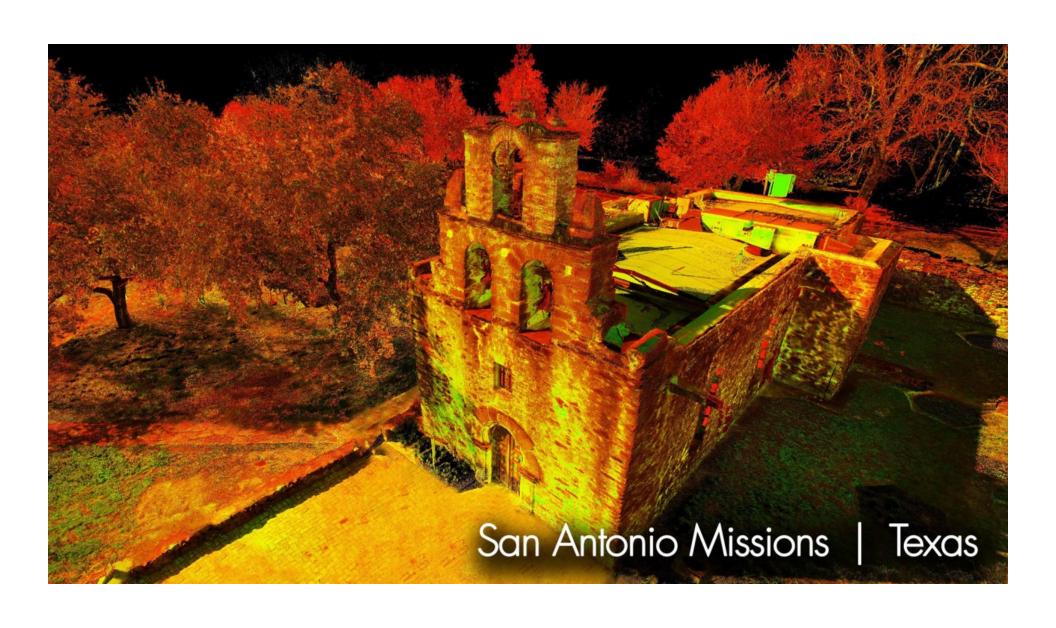






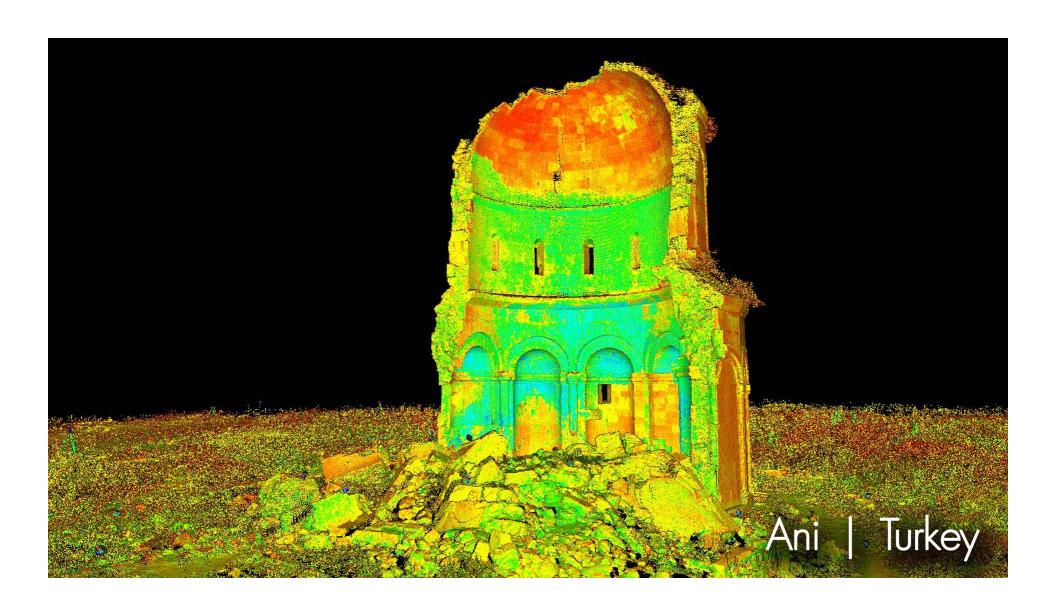


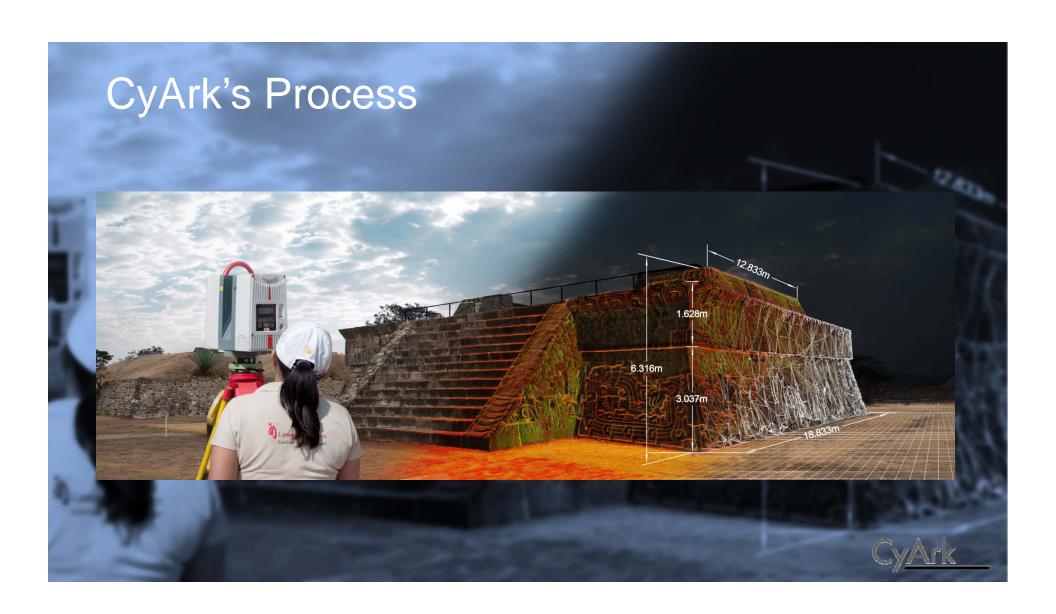




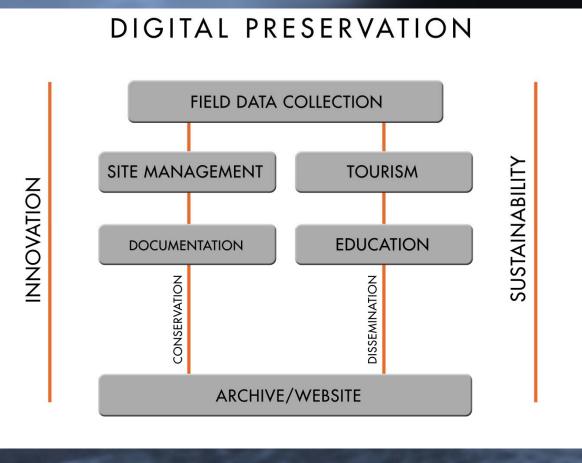








# CyArk's Process



#### Preservation



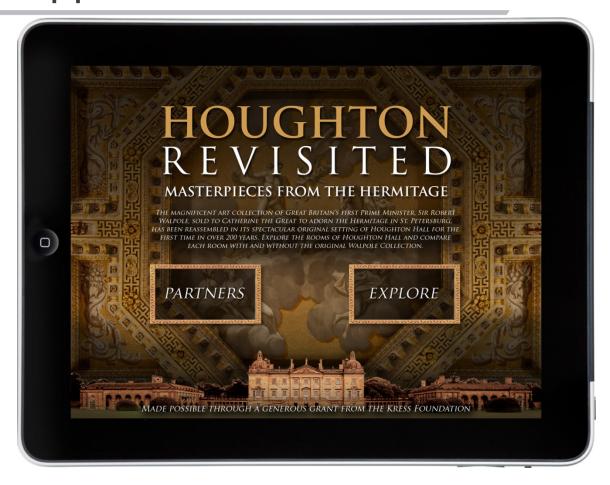
Cy<u>Ark</u>

#### **Virtual Tours**





### Mobile Apps





#### Touch-Screen Kiosks



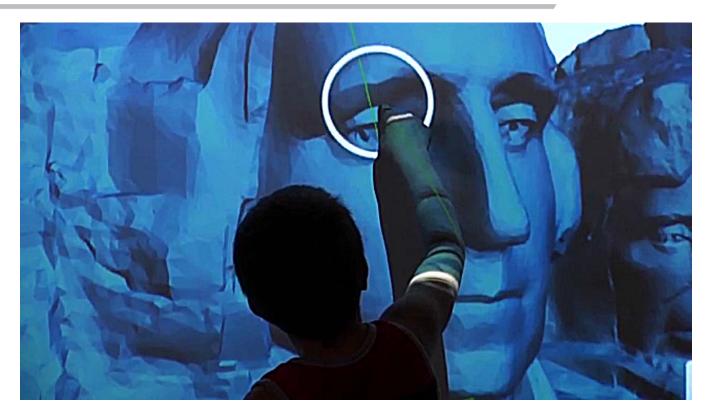
Cy<u>Ark</u>

#### Historic Virtual Reconstructions





#### Interactive Educational Content



CyArk

#### **Archive**

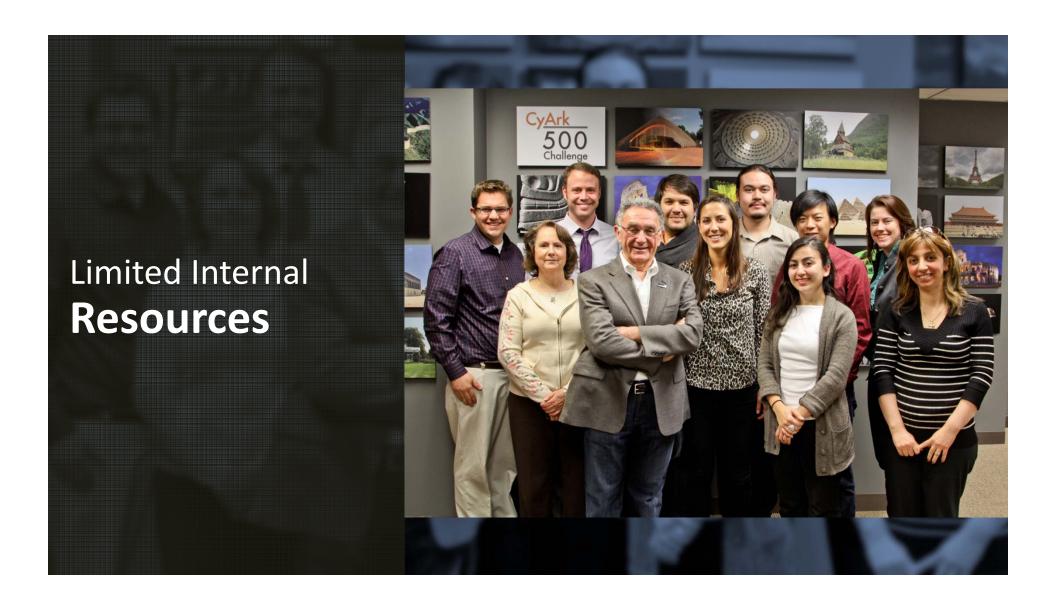


Cy<u>Ark</u>

# Our Challenges

The Past





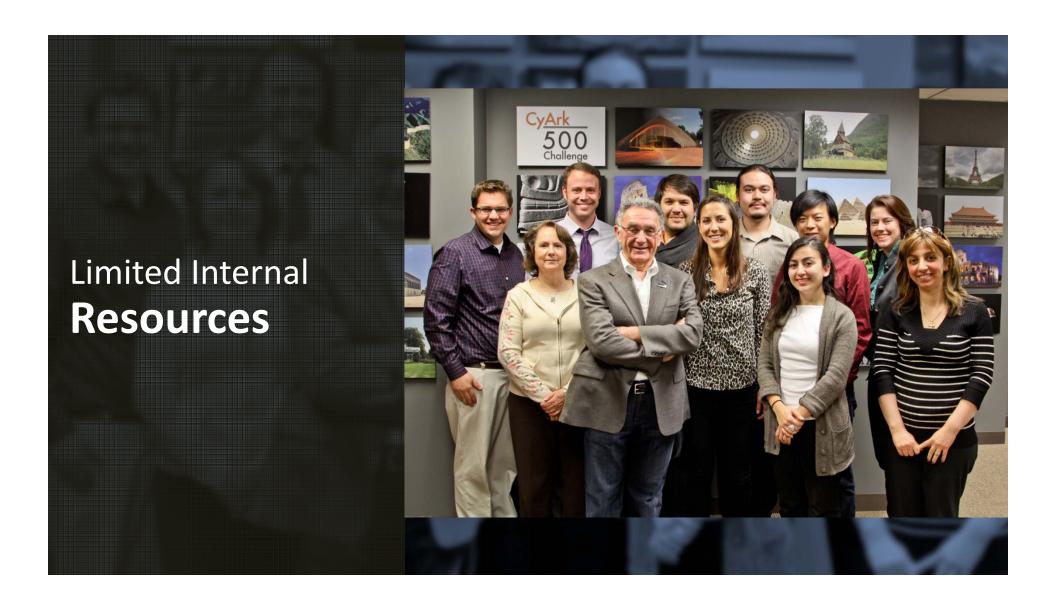




# Our Challenges

The Present





#### **Data Growth**

Past: 1/2 TB per project

Now: **5 TB** per project

Mount Rushmore: 2010 2 weeks

to generate **3.3 Billion** data points

Lourdes, France: 2012 6 hours

to generate **3 Billion** data points

>2 PBs in next 5 years

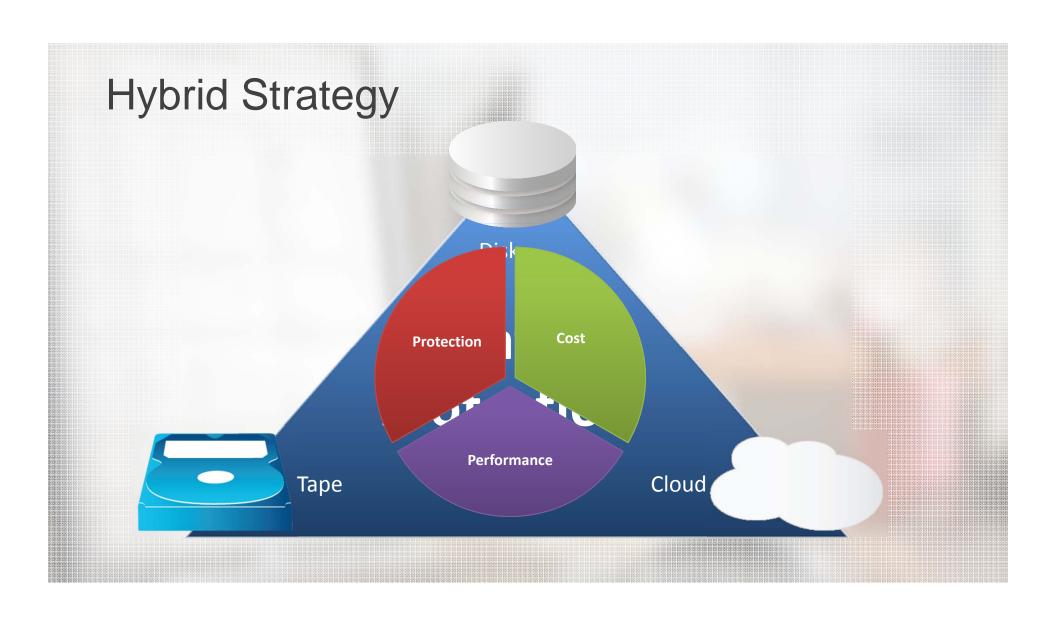
Annual growth 30%



### Our Solution

# Data Management Requirements

- Reliable protect forever
- Scalable 30% growth rate
- Secure Unique site requirements
- **Easy to manage** scarce technical resources
- Requirements Cost-effective More budget available for non-profit mission



# Who would have thought?



This would be the answer.

# Linear Tape File System on LTO5

- LTO5 is ideal for archive data
  - More reliable
  - 30-year life expectancy
- Less expensive to operate
  - Lower power and cooling
  - Doesn't require raised floor
- Faster and easier to access our data
  - Makes tape look like NAS

#### **OPERATIONAL ENVIRONMENT BACKUP AND RECOVERY** ACTIVE DATA Office Backup tapes Field data on Onsite storage and Weekly backup portable HDS @local vault processing (2 servers) Initial ingestion Final ingestion INACTIVE DATA Offsite LTFS archive Ingestion creates a second LTFS tape @remote underground storage facility Onsite LTFS archive

## Results

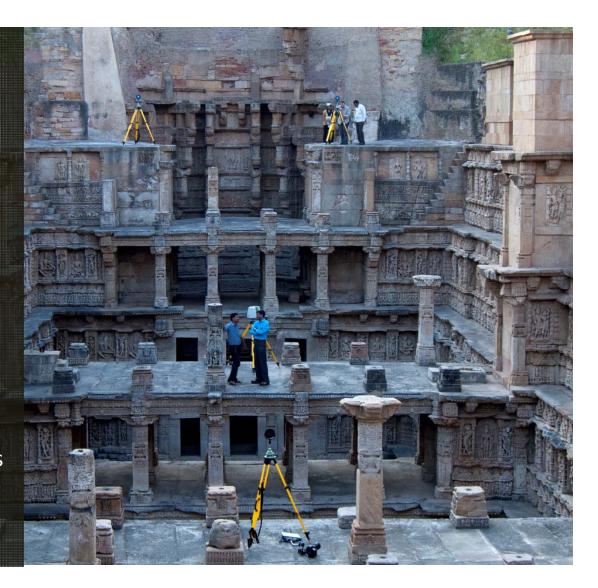
System went online

September 29, 2012

**34%** growth rate in the first year

Enabling CyArk 500 mission

Volume of partner data contributions has **exceeded expectations** 

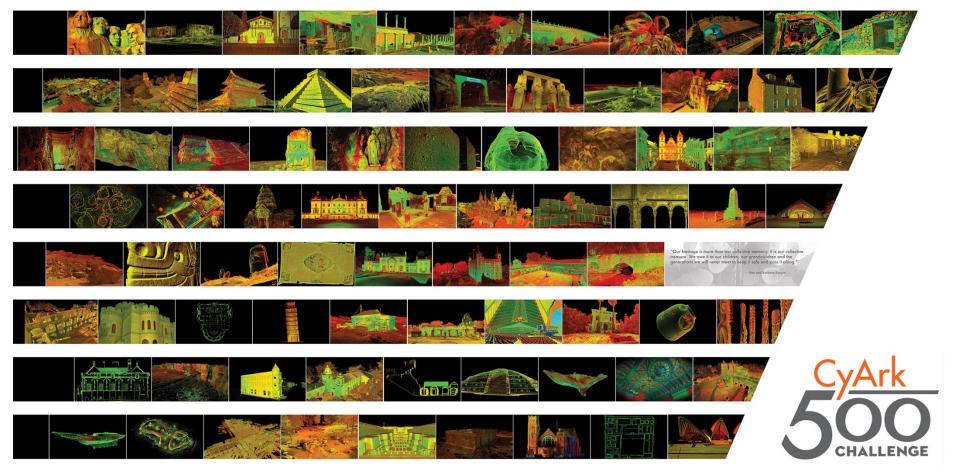


# Our Challenges

The Future



#### www.cyark.org





#### Our Human Story

"If we don't have the data, We have no story to tell."



# Thank you!

Questions?

Justin Barton justin.barton@cyark.org

