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Theseus

LearnTec Zukunftswerkstatt
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Introduction

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History

Longitude Prize.



» In **1714** the British government offered the Longitude Prize for a navigational solution to the **determination of longitude** on the high seas. It was assumed that the solution laid in using star maps as navigational aides and that the winner would be an astronomer but the solution was achieved by a London clockmaker with the **marine chronometer**.



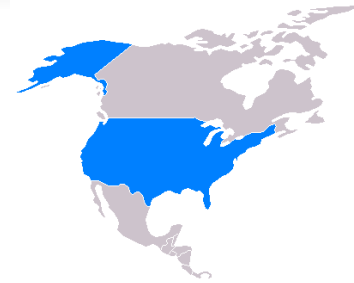
History

Lanz Preis der Lüfte.

» In **1908** Karl Lanz, locomotive manufacturer from Mannheim, offered 40,000 Mark for the first **German pilot** flying the shape of a lying eight in an airplane constructed and built in Germany. Hans Grade, an engineer from Magdeburg won the prize, Lanz however built 22 **Luftschiffe** under the brand Schütte-Lanz.

History

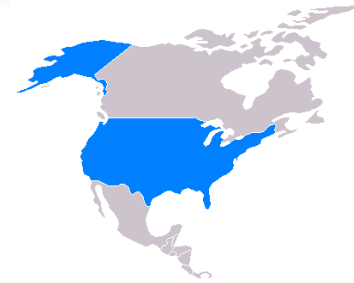
Orteig Prize.



» In **1919** Raymond Orteig, a wealthy banker, offered \$25,000 for the first non-stop flight from **New York to Paris**. The prize was won in 1927 by an unknown airmail pilot named Charles Lindbergh who won the hearts of a nation, and his world-changing achievement spawned a **\$300 bn. aviation industry**.

History

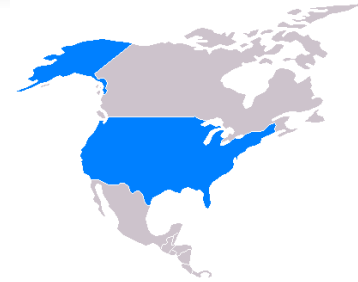
Dole Air Race.



» In **1927** James D. Dole, the Hawaii pineapple magnate, offered a prize of \$25,000 for the first flight across the **Pacific Ocean** from Oakland, California to Honolulu, Hawaii, a distance of 3870 kilometers. The fifteen competitors were seen off by a crowd estimated to include **75,000 to 100,000 persons.**

History

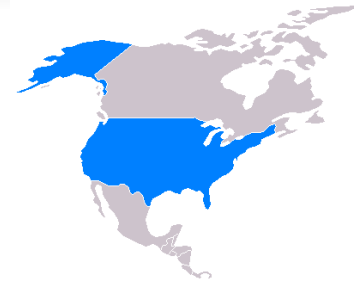
X Prize.



» The X Prize Foundation offers several multi-million dollar awards, each given to the first team to achieve a specific goal. In **2004**, the Spaceship One of Mojave Aerospace Ventures team, led by Burt Rutan and financed by Microsoft co-founder Paul Allen, captured the Ansari X Prize, revolutionizing **private spaceflight**.

History

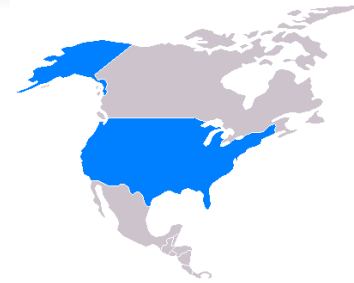
Centennial Challenges



» In **2005** the US National Aeronautics and Space Administration (NASA) revealed a range of 13 different development contests, called the Centennial Challenges, designed to stimulate **innovation** and **competition** in solar system exploration and ongoing NASA mission areas. The contests include solar sails, lunar excavators or astronaut gloves.

History

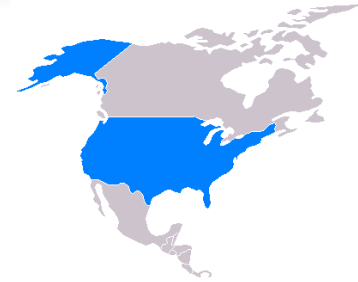
Darpa Grand Challenge.



» The **2005** DARPA Grand Challenge focuses on the development of **autonomous vehicles**. The **National Defense** Authorization Act of 2001 mandated that “It shall be a goal of the Armed Forces to achieve the fielding of unmanned, remotely controlled technology such that . . . by 2015, one-third of the operational ground combat vehicles are unmanned.”

History

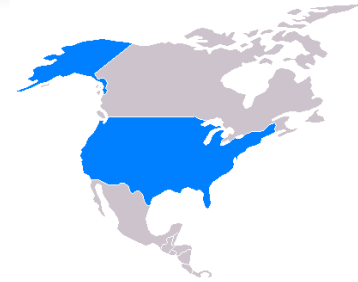
NetFlix Prize.



» In **2006**, Netflix, a DVD subscription service in the United States, announced an prize of USD 1 million for the individual or group that can achieve a 10 percent improvement in the accuracy of **movie recommendations** based on personal preferences.

History

Google Summer of Code.



» An annual summer program initiated by Google, a search engine company, awarding stipends of \$5,000 to students for free software / open-source

coding projects. In **2007** 136 open source organizations participated, more than 6,200

applications were received and more than

900 **students** were selected



History

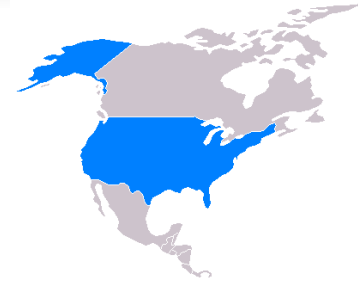
Top Down vs. Bottom Up.

- » 1975 **Microsoft** (Bill Gates and Paul Allen)
- » 1991 **Linux** (Linus Torvalds)
- » 1994 **Yahoo** (Jerry Yang and David Filo)
- » 1998 **Google** (Larry Page and Sergey Brin)
- » 1999 **MySpace** (Thomas Anderson and Christopher DeWolfe)
- » 2005 **YouTube** (Steve Chen, Chad Hurley, Jawed Karim)

Attributes

Attributes

Fostering Innovation.

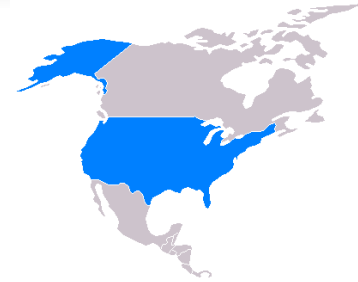


National Academy of Engineering. *Report of the Steering Committee for the Workshop to Assess the Potential for Promoting Technological Advance through Government-Sponsored Prizes and Contests*. National Academy of Engineering. 1999, 56 pages, 8.5 x 11, Available:

http://www.nap.edu/catalog.php?record_id=9724

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Centennial Challenges.

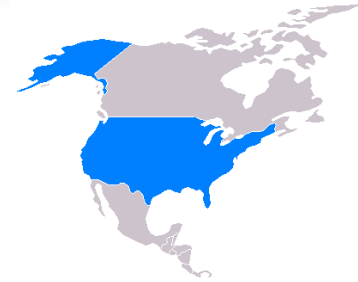


- » Keystone Challenges: "To address technology priorities"
- » Alliance Challenges: "To leverage partnerships," contests organized in collaboration with non-government partners
- » Quest Challenges: "To promote science, technology, engineering and math outreach"

Source: Ken Davidian. *Prize Competitions and NASA's Centennial Challenges Program*. Centennial Challenges. Competition Structure. September 8, 2005, Available: http://ipp.nasa.gov/documents/cc_ilc_paper_2005-09-08.pdf

Attributes

Centennial Challenges.

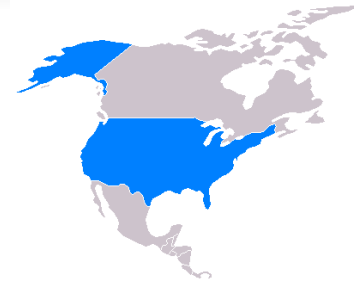


- » Stimulate Innovation in Ways That Standard Federal Procurement Cannot - Incite innovation instead of honoring past achievements; Judge and earn awards based on actual achievements, not proposals
- » Help Address Traditional Technology Development Obstacles - Develop, integrate, and test with multiple teams or various approaches to the same technical goal

Source: Steidle, Craig E. *Statement of Craig E. Steidle at House Science Committee Hearing on NASA Aerospace Prizes*. NASA Office of Exploration Systems. Status Report, July 15, 2004, Available: <http://www.moontoday.net/news/viewsr.html?pid=13390>

Attributes

Centennial Challenges.



» Achieve Returns That Outweigh the Program's Investment - Resources spent by teams to win prize competitions usually exceed the value of the prize many times over

» Educate, Inspire and Motivate the Public - Highly visible Challenges will draw substantial public, educator, and student interest

Source: Steidle, Craig E. *Statement of Craig E. Steidle at House Science Committee Hearing on NASA Aerospace Prizes*. NASA Office of Exploration Systems. Status Report, July 15, 2004, Available: <http://www.moontoday.net/news/viewsr.html?pid=13390>

Theseus Organization

Theseus



» Athen, defeated Crete had to sent every nine years seven Athenian boys and seven Athenian girls to be devoured by the Minotaur, a half-man, half-bull monster. On the third occasion Theseus used Ariadne's thread , the archetype of semantic navigation systems, to penetrate the labyrinth of Daedalus and kill the Minotaur.

Theseus

Objectives.



- » THESEUS is a research program initiated by the Federal Ministry of Economy and Technology (BMWi), focusing on semantic technologies which determine the meaning of content and knowledge.
- » The five year project has a budget of 180 million Euro. BMWi provides some 90 million Euro. The participating partners from industry and research provide the rest.

Source: Theseus Programm. <http://www.theseus-programm.de/about-theseus>

Theseus Organization

Content Technology Cluster /Work Packages.



- » CTC Management
- » Video, Audio, Metadata, Platforms
- » Ontology Management
- » Situation Aware Dialogue Shell for the
Semantic Access to Media and Services
- » User Interface, Visualization
- » Statistical Machine Learning
- » DRM/IPR Management
- » Evaluation

Source: Theseus Program. <http://www.theseus-programm.de/about-theseus>

Theseus Organization

Use Cases.



- » ALEXANDRIA (Lycos Europe) - Publishing platform for user generated content. Combination of semantics and community recommendation.
- » TEXO (SAP) - Future business value networks (Web of services). Combination of SOA-based software components.
- » MEDICO (Siemens) - Scalable semantic analysis of diagnostic images in medicine.

Source: Theseus Program. <http://www.theseus-programm.de/about-theseus>

Theseus Organization

Use Cases.



- » CONTENTUS (DNB) - Semantic access to AV-archives as a part of safeguarding the national cultural heritage.
- » ORDO (empolis) - Integrated Digital Control center for distributed, heterogeneous information.
- » PROCESSUS (empolis) - Semantically enriched process-chains in and across industrial companies.

Source: Theseus Program. <http://www.theseus-programm.de/about-theseus>

Theseus Organization

Partners.



» Fraunhofer Society, German Research Center for Artificial Intelligence (DFKI), Research Center for Computer Science (FZI), Ludwig Maximilian University (LMU), Technical University (TU) in Munich, TU Darmstadt, University of Karlsruhe, TU Dresden, University of Erlangen. German National Library, empolis, Lycos Europe, SAP, Siemens, Deutsche Thomson oHG, Festo, Intelligent Views, m2any, Moresophy, Ontoprise, Verband Deutscher Maschinen- und Anlagenbau e.V. (VDMA), and the Institute of Radio Technology.

Source: Theseus Program. <http://www.theseus-programm.de/about-theseus>

Theseus Talente

Theseus Talente

Introduction.



- » Mit dem Wettbewerb öffnet sich das Programm THESEUS für die Talente in Deutschland, die als schlummernde Potenziale auf ihre Chance warten.
- » Mit dem Wettbewerb wird angestrebt, dass Entwicklungen von SchülerInnen, StudentInnen, NachwuchswissenschaftlerInnen, TüftlerInnen, und ProgrammiererInnen, außerhalb des Konsortiums in THESEUS eingebracht werden können.



Theseus Talente

Dates.

23. Oktober **2007** Start

1. November **2007** Bewerbungsbeginn

14. April **2008** Einsendeschluss

April/Mai **2008** Evaluation

Juni **2008** Preisverleihung

Juli/August **2008** Umsetzung



Theseus Talente

Prizes.

- 1. Preis 10.000 Euro
- 2.-4. Preis: 5.000 Euro
- 5.-20. Preis: 2.500 Euro

Praktikum/ Diplom/ Master
Mentoring/ Betreuung
Presse/ Promotion/ Preis

Theseus Talente

Organization.



» Der Theseus Wettbewerb wird über die folgende Website koordiniert: www.theseus-programm.de .

» Für die Ausschreibung und Programmieraufgaben wird den Teilnehmern eine Open Source Entwicklungsumgebung zur Verfügung gestellt (Subversion, CVS, SourceForge)

Theseus Talente

Procedure.



» Der unabhängige Projektträger, das Deutsche Zentrum für Luft- und Raumfahrt (DLR), prüft die eingereichten Beiträge und erstellt eine Liste der Favoriten.

» Anschließend bewertet eine hochkarätige Jury aus Wissenschaft und Wirtschaft die Arbeiten und empfiehlt die Preisträger. Auf einer Preisverleihung Mitte 2008 werden die Preisträger ausgezeichnet.

Theseus Talente

Jury.



» Die Jury setzt sich in einem ausgewogenen Verhältnis aus Vertretern des Ministeriums, der Wirtschaft und der Forschung zusammen.

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Prize Ceremony.



» Die Preisverleihung erfolgt im Rahmen einer öffentlichkeitswirksamen Veranstaltung mit hochrangiger Beteiligung aus Politik und Wirtschaft Mitte 2008. Darüber hinaus ist eine Teilnahme der Preisträger an nationalen und internationalen Konferenzen vorgesehen.

Theseus Talente

Challenges.



» 3 konkrete und bedeutsame Fragestellungen aus jedem Anwendungsszenario für ein Problem oder einen Forschungsansatz

» Zusätzlich jeweils eine weitere offene Fragestellung aus dem inhaltlichen Kontext des Anwendungsszenario mit weiteren Spielraum für innovative Ansätze und Ideen.

Challenges

Theseus Talente

Challenges.



» Wie kann man bei der Anreicherung von automatisch bereitgestelltem Wissen durch Benutzer eine Qualitätskontrolle durch eine automatische Bewertung vornehmen und hochwertige von minderwertigen Beiträgen unterscheiden ?

Theseus Talente

Challenges.



» Wie könnte die Visualisierung eines semantischen Netzes über Musikstücke aussehen, das auf sowohl archivarisch erfassten Daten über Musikalien, als auch auf Daten, die sich direkt aus den einzelnen Stücken selbst ableiten lassen, wie beispielsweise Stimmungen, Harmonien, Taktung oder Dynamik, aufbaut ?

Theseus Talente

Challenges.



» Inwieweit lassen sich Schnittstellen zwischen einzelnen Komponenten der Visualisierung im semantic web standardisieren ?

Theseus Talente

Challenges.



» Wie können serious games Technologien zu Visualisierungs-Techniken für semantic web weiterentwickelt werden ?

Conclusion

Contact Information.

Thank you for your attention.
I will gladly answer your questions.

Prof. Hendrik Speck

contact (at) hendrikspeck [dot] com

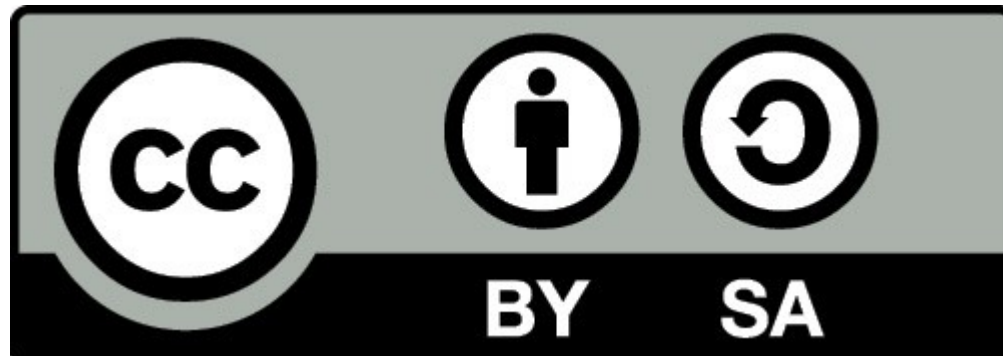
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Conclusion

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