



# Community Software Successes & Failures

Sustainable Software in HEP  
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# History

- HEP Community Software; over 40 years of it
  - Given how long the concept has been around, our field has lots of examples to examine.
  - In all that time the only constant was change.
  - Failures: When did a software package die? And why?
  - Successes: What do they have going for them?



CERN Program Library

*CERNLIB*

Short Writeups

Application Software and Databases

Computing and Networks Division

CERN/Geneva, Switzerland

# Adoption of Community Software

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- When considering adoption something you are not completely in control of -> do Risk Analysis
- Questions to ask:
  - Is the software Open?
  - If so:
    - Does the package have a well defined stakeholder process (governance)?
    - What is it's contribution policy?
  - What are it's dependencies?
  - Is there some vendor lock-in I have to accept the risk of?
  - What is it's institutional support?

# Institutional Support

1. Multiple institutions have developers that contribute to product:

iNSPIRE<sup>HEP</sup>

Help

Submit

## INSPIRE Collaboration



INSPIRE

About INSPIRE

Content Policy

Privacy Policy

Help

FAQ

INSPIRE Help

Tools

Bibliography generator New

Community

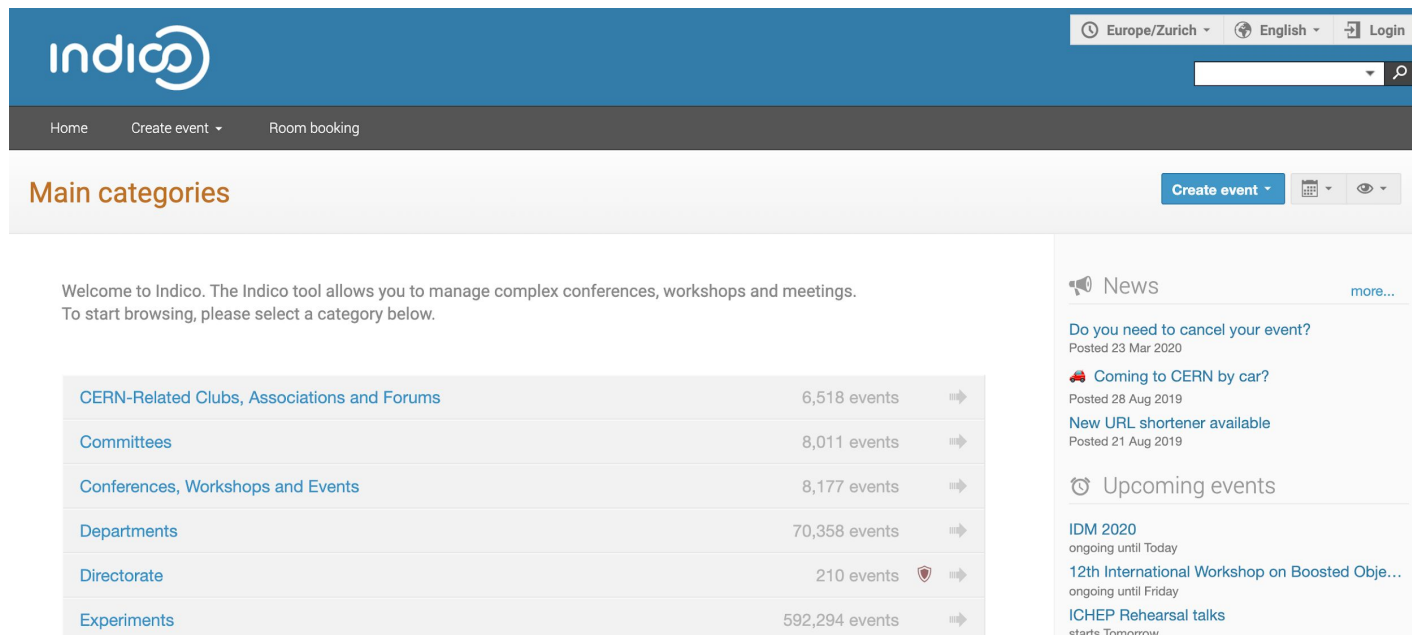
Blog

Twitter

Contact

# Institutional Support

## 2. Single institution developers but many users at other institutions:



The screenshot shows the Indico website interface. At the top, there is a blue header with the Indico logo on the left and navigation links for 'Europe/Zurich', 'English', and 'Login' on the right. Below the header is a dark navigation bar with 'Home', 'Create event', and 'Room booking' links. The main content area is white and features a 'Main categories' section with a 'Create event' button and a search icon. A welcome message states: 'Welcome to Indico. The Indico tool allows you to manage complex conferences, workshops and meetings. To start browsing, please select a category below.' Below this is a table of categories with their respective event counts and right-pointing arrows. To the right of the table is a 'News' section with a 'more...' link and several news items, including 'Do you need to cancel your event?', 'Coming to CERN by car?', and 'New URL shortener available'. Below the news is an 'Upcoming events' section with items like 'IDM 2020', '12th International Workshop on Boosted Objects', and 'ICHEP Rehearsal talks'.

Category	Event Count	Action
<a href="#">CERN-Related Clubs, Associations and Forums</a>	6,518 events	→
<a href="#">Committees</a>	8,011 events	→
<a href="#">Conferences, Workshops and Events</a>	8,177 events	→
<a href="#">Departments</a>	70,358 events	→
<a href="#">Directorate</a>	210 events	🛡️ →
<a href="#">Experiments</a>	592,294 events	→

# Institutional Support

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3. Products that come from one institution or one experiment:



**PHEDEX WEB SITE**

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# More Multi-Institutional Packages

Géant, ROOT, Rucio, dCache, Spack




dCache.org 


[DOCUMENTATION](#) | [DOWNLOADS](#) | [FEEDBACK](#) | [SEARCH](#) | [IMPRINT](#)



A flexible package manager supporting multiple versions, configurations, platforms, and compilers.

 [GitHub](#)

 [Twitter](#)

 [Docs](#)

 [Discussion](#)

 [Contribute](#)

# More Single institution

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Well aligned with the mission of that institution:

Enstore



FronTier

SAM





# More Single Institution

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Not well aligned:



High Performance Storage System

