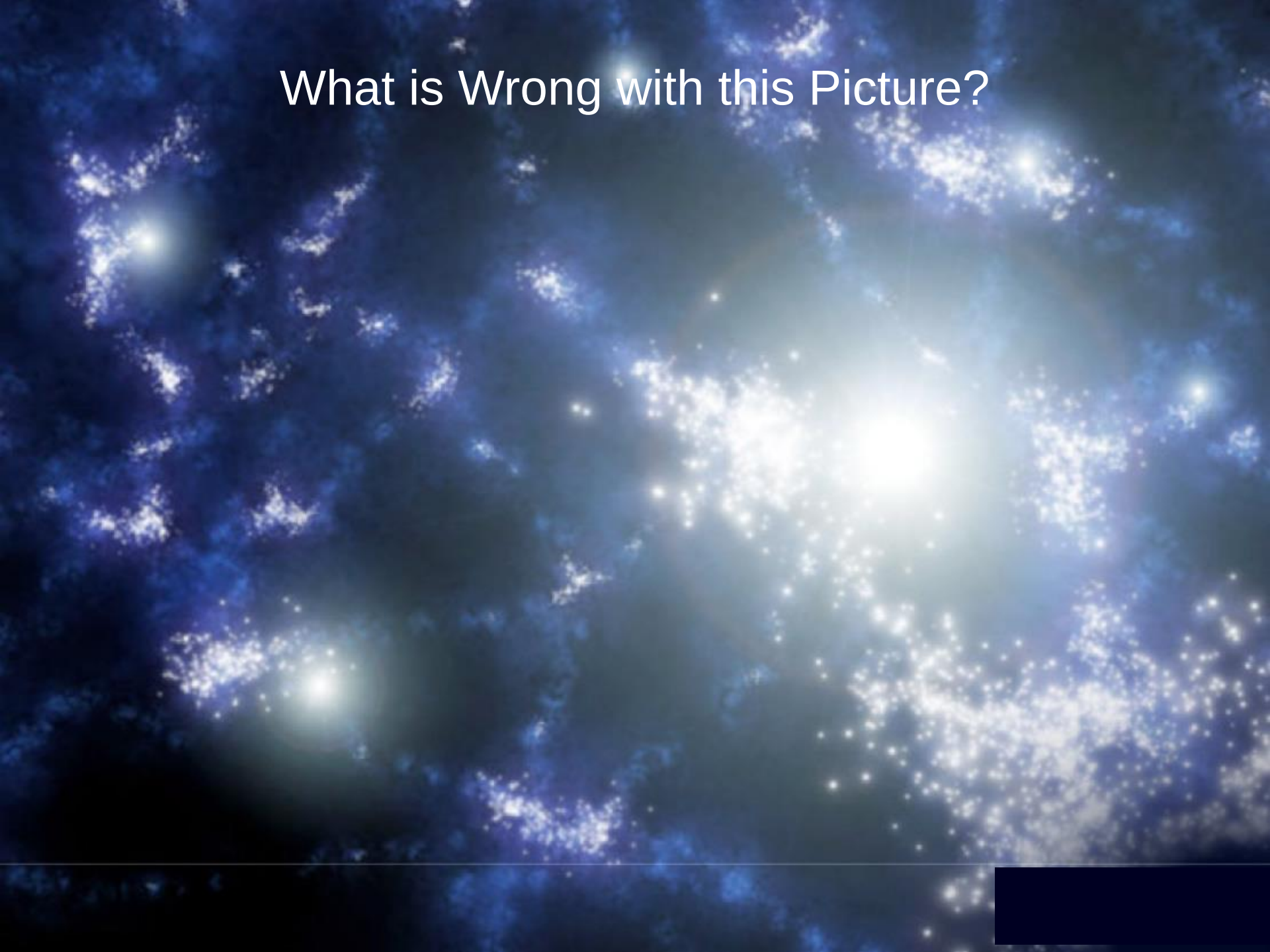
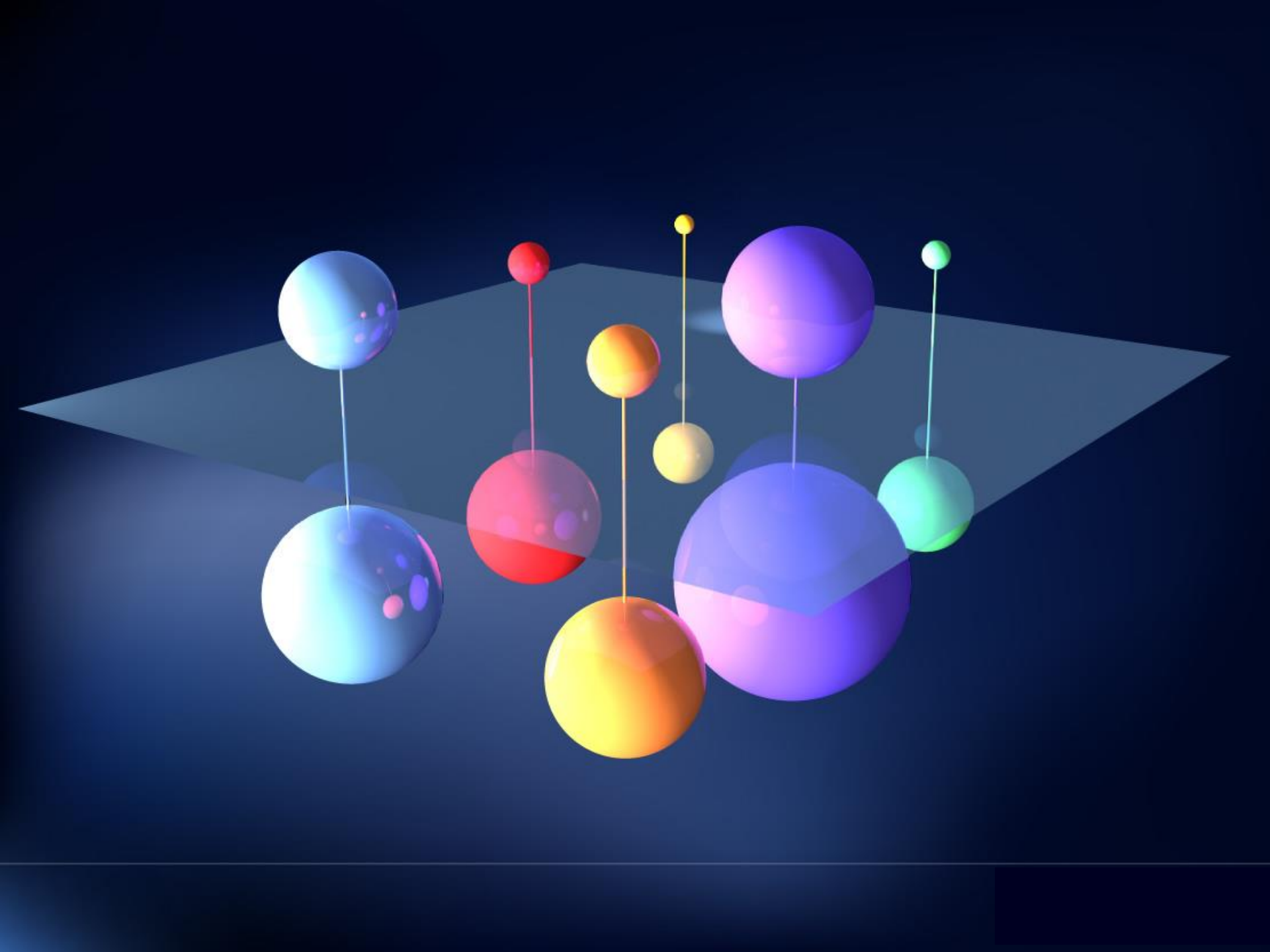
From Open Science to Open Innovation, Case: IdeaSquare@CERN

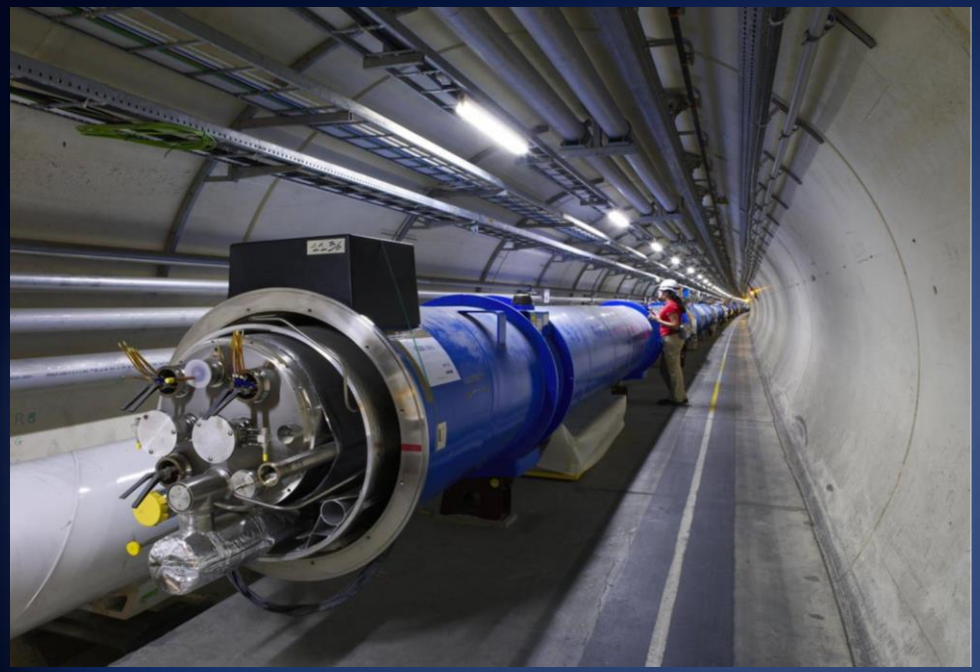
Corporate Venturing Leadership Forum, October 10, 2018

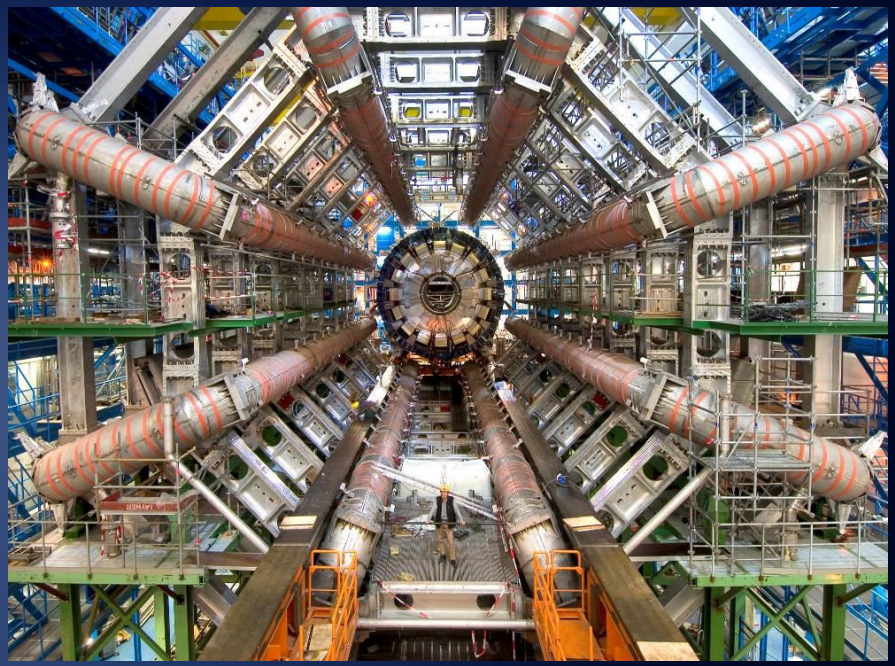
Markus Nordberg
Head of Resources Development,
Development and Innovation Unit (CERN IPT-DI)


What is Wrong with this Picture?

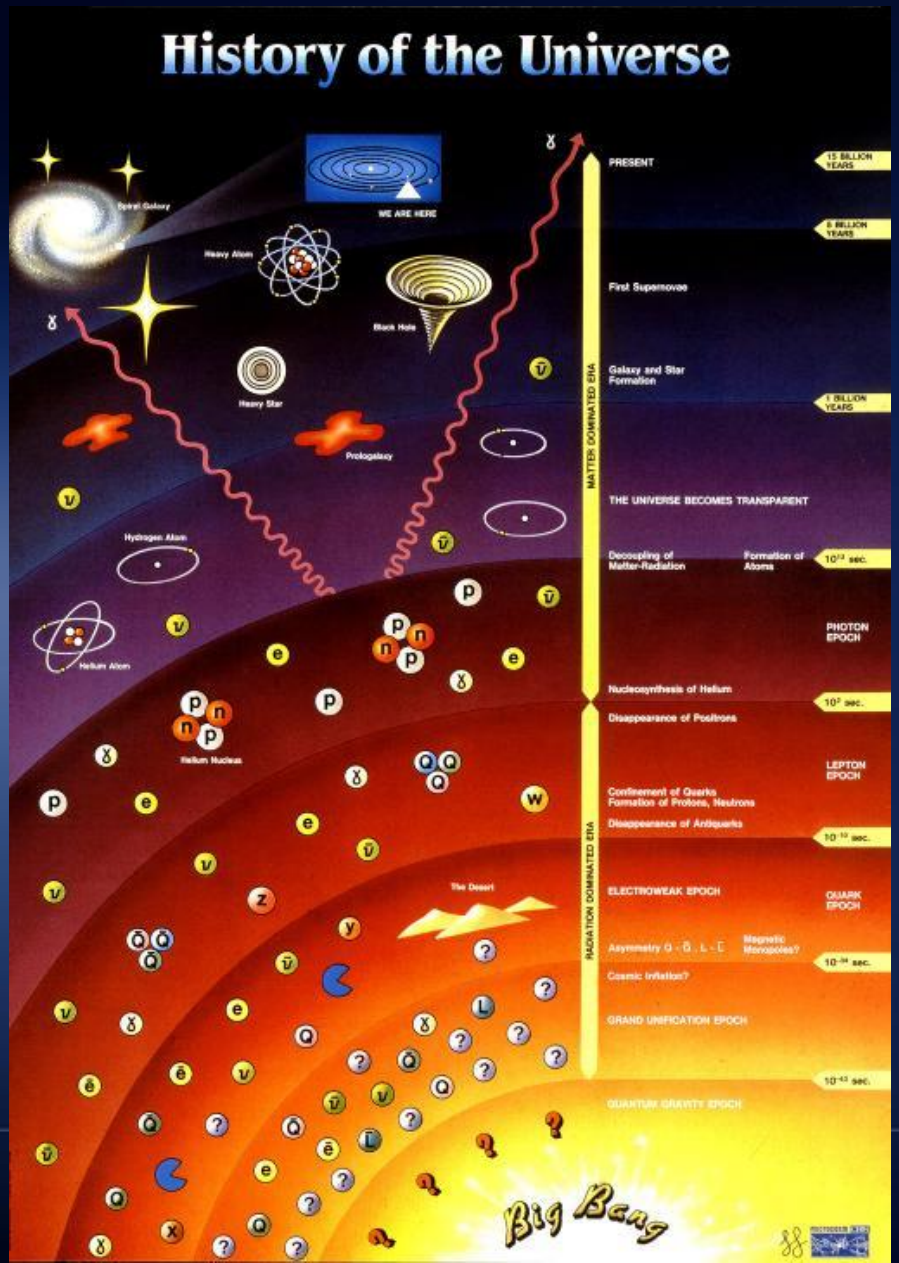


We Develop & Use Advanced Scientific Instruments of Industrial Scale to understand the Big Bang



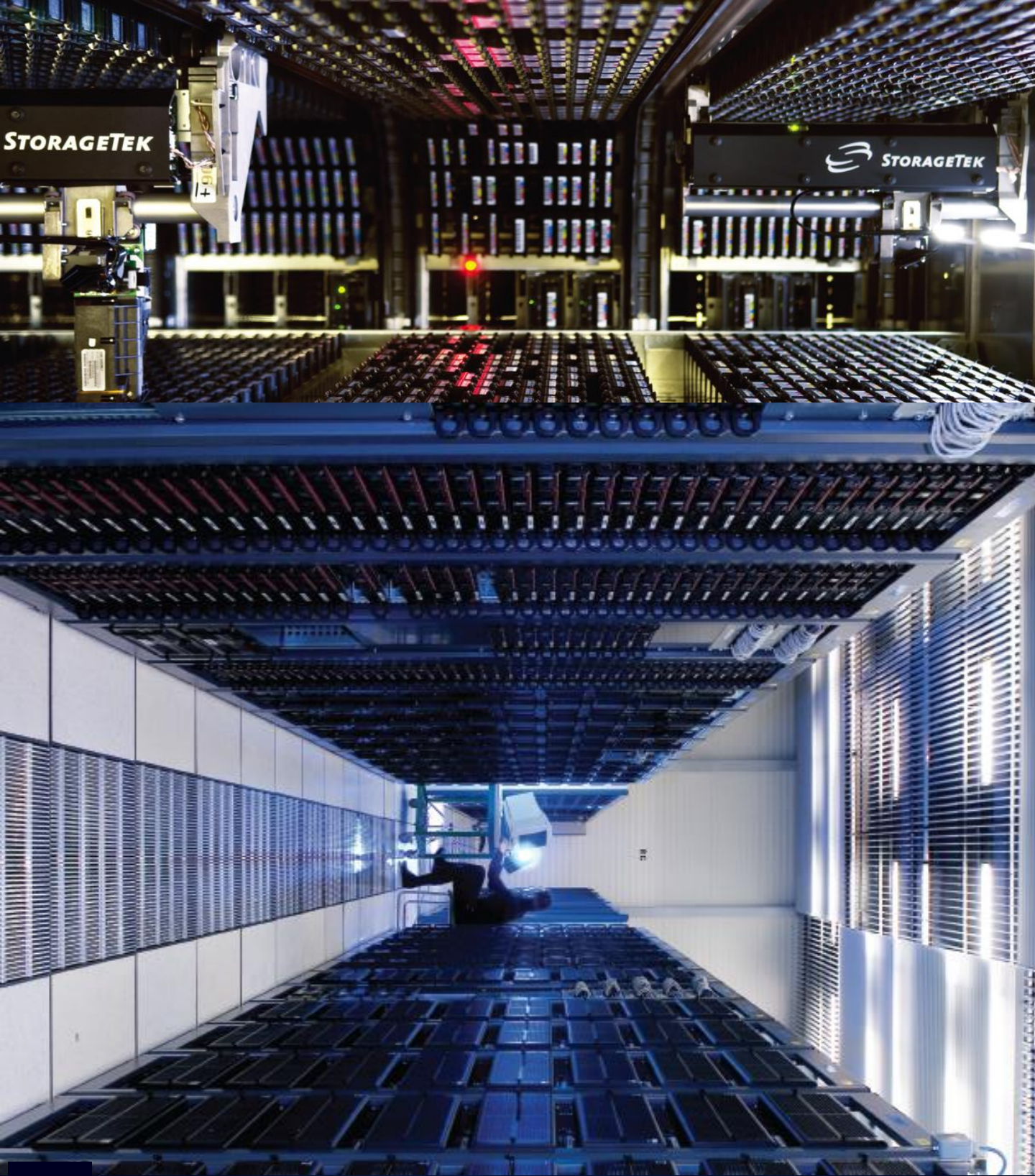


How does CERN Connect?



The Gap

http://cern.ch/ideasquare


StorageTek
StorageTek


C
D
ATLAS
EXPERIMENT

Charged-particle multiplicities in pp interactions at $\sqrt{s} = 900$ GeV measured with the ATLAS detector at the LHC ☆,☆☆

ATLAS Collaboration

ARTICLE INFO

Article history:
Received 16 March 2010
Received in revised form 22 March 2010
Accepted 22 March 2010
Available online 28 March 2010
Editor: W.-D. Schlatter

Keywords:
Charged-particle
Multiplicities
900 GeV
ATLAS
LHC
Minimum bias

ABSTRACT

The first measurements from proton–proton collisions recorded with the ATLAS detector at th
are presented. Data were collected in December 2009 using a minimum-bias trigger during col
at a centre-of-mass energy of 900 GeV. The charged-particle multiplicity, its dependence on tran
momentum and pseudorapidity, and the relationship between mean transverse momentum and ch
particle multiplicity are measured for events with at least one charged particle in the kinematic
$|\eta| < 2.5$ and $p_T > 500$ MeV. The measurements are compared to Monte Carlo models of proton–
collisions and to results from other experiments at the same centre-of-mass energy. The charged-p
multiplicity per event and unit of pseudorapidity at $\eta = 0$ is measured to be 1.333 ± 0.003(s
0.040(syst.), which is 5–15% higher than the Monte Carlo models predict.

2010 Published by Elsevi

1. Introduction

Inclusive charged-particle distributions have been measured in pp and $p\bar{p}$ collisions at a range of different centre-of-mass energi
13]. Many of these measurements have been used to constrain phenomenological models of soft-hadronic interactions and to p
properties at higher centre-of-mass energies. Most of the previous charged-particle multiplicity measurements were obtained by sel
data with a double-arm coincidence trigger, thus removing large fractions of diffractive events. The data were then further correc
remove the remaining single-diffractive component. This selection is referred to as non-single-diffractive (NSD). In some cases, desig
as inelastic non-diffractive, the residual double-diffractive component was also subtracted. The selection of NSD or inelastic non-diffr
charged-particle spectra involves model-dependent corrections for the diffractive components and for effects of the trigger selecti
events with no charged particles within the acceptance of the detector. The measurement presented in this Letter implements a dif
strategy, which uses a single-arm trigger overlapping with the acceptance of the tracking volume. Results are presented as incl
inelastic distributions, with minimal model-dependence, by requiring one charged particle within the acceptance of the measureme

This Letter reports on a measurement of primary charged particles with a momentum component transverse to the beam dire

ATLAS Collaboration

G. Aad [48], E. Abat [18a,*], B. Abbott [110], J. Abdallah [11], A.A. Abdelalim [49], A. Abdesselam [117], O. Abdinov
B. Abi [111], M. Abolins [88], H. Abramowicz [151], H. Abreu [114], E. Acerbi [89a,89b], B.S. Acharya [162a,162b],
M. Ackers [20], D.L. Adams [24], T.N. Addy [56], J. Adelman [173], M. Aderholz [99], C. Adorisio [36a,36b], P. Adrag
T. Adye [128], S. Aefsky [22], J.A. Aguilar-Saavedra [123b], M. Aharrouche [81], S.P. Ahlen [21], F. Ahles [48],
A. Ahmad [146], H. Ahmed [2], M. Ahsan [40], G. Aielli [132a,132b], T. Akdogan [18a], P.F. Åkesson [29], T.P.A. Åkes
G. Akimoto [153], A.V. Akimov [94], A. Aktas [48], M.S. Alam [1], M.A. Alam [76], J. Albert [167], S. Albrand [55],
M. Aleksa [29], I.N. Aleksandrov [65], M. Aleppo [89a,89b], F. Alessandria [89a], C. Alexa [25a], G. Alexander [151],
G. Alexandre [49], T. Alexopoulos [9], M. Alhroob [20], M. Aliev [15], G. Alimonti [89a], J. Alison [119], M. Aliyev
P.P. Allport [73], S.E. Allwood-Spiers [53], J. Almond [82], A. Aloisio [102a,102b], R. Alon [169], A. Alonso [79],
J. Alonso [14], M.G. Alviggi [102a,102b], K. Amako [66], P. Amaral [29], G. Ambrosini [16], G. Ambrosio [89a,d],
C. Amelung [22], V.V. Ammosov [127,*], A. Amorim [123a], G. Amorós [165], N. Amram [151], C. Anastopoulos
T. Andeen [29], C.F. Anders [48], K.J. Anderson [30], A. Andreazza [89a,89b], V. Andrei [58a], M.-L. Andrieux [55],
X.S. Anduaga [70], A. Angerami [34], F. Anghinolfi [29], N. Anjos [123a], A. Annovi [47], A. Antonaki [8], M. Anton
S. Antonelli [19a,19b], J. Antos [143b], B. Antunovic [41], F. Anulli [131a], S. Aoun [83], G. Arabidze [8], I. Aracena
Y. Arai [66], A.T.H. Arce [14], J.P. Archambault [28], S. Arfaoui [29,b], J.-F. Arguin [14], T. Argyropoulos [9], E. Arik
M. Arik [18a], A.J. Armbruster [87], K.E. Arms [108], S.R. Armstrong [24], O. Arnaez [4], C. Arnault [114],
A. Artamonov [95], D. Arutinov [20], M. Asai [142], S. Asai [153], R. Asfandiyarov [170], S. Ask [82], B. Åsman [144a,
D. Asner [28], L. Asquith [77], K. Assamagan [24], A. Astbury [167], A. Astvatsatourov [52], B. Athar [1], G. Atoian
B. Aubert [4], B. Auerbach [173], E. Auge [114], K. Augsten [126], M. Aurousseau [4], N. Austin [73], G. Avolio [161],
R. Avramidou [9], D. Axen [166], C. Ay [54], G. Azuelos [93,c], Y. Azuma [153], M.A. Baak [29], G. Baccaglioni [89a],
C. Bacci [133a,133b], A.M. Bach [14], H. Bachacou [135], K. Bachas [29], G. Bachy [29], M. Backes [49], E. Badescu [25
P. Bagnaia [131a,131b], Y. Bai [32a], D.C. Bailey [156], T. Bain [156], J.T. Baines [128], O.K. Baker [173], M.D. Baker [24
S. Baker [77], F. Baltasar Dos Santos Pedrosa [29], E. Banas [38], P. Banerjee [93], S. Banerjee [167], D. Banfi [89a,
A. Bangert [136], V. Bansal [167], S.P. Baranov [94], S. Baranov [65], A. Barashkou [65], T. Barber [27], E.L. Barberi
D. Barberis [50a,50b], M. Barbero [20], D.Y. Bardin [65], T. Barillari [99], M. Barisonzi [172], T. Barklow [142],
N. Barlow [27], B.M. Barnett [128], R.M. Barnett [14], A. Baroncelli [133a], M. Barone [47], A.J. Barr [117], F. Barrei
J. Barreiro Guimarães da Costa [57], P. Barrillon [114], V. Bartheld [99], H. Bartko [99], R. Bartoldus [142],
D. Bartsch [20], R.L. Bates [53], S. Bathe [24], L. Batkova [143a], J.R. Batley [27], A. Battaglia [16], M. Battistin [29],

A. Tonazzo [133a,133b], G. Tong [32a], A. Tonoyan [13], C. Topfel [16], N.D. Topilin [65], E. Torrence [113],
E. Torró Pastor [165], J. Toth [83,u], F. Touchard [83], D.R. Tovey [138], T. Trefzger [171], J. Treis [20], L. Tremblet [29],
A. Tricoli [29], I.M. Trigger [157a], G. Trilling [14], S. Trincaz-Duvoid [78], T.N. Trinh [78], M.F. Tripiana [70],
N. Triplett [64], W. Trischuk [156], A. Trivedi [24,t], Z. Trka [125], B. Trocmé [55], C. Troncon [89a], A. Trzupek [38],
C. Tsarouchas [9], J.C.-L. Tseng [117], M. Tsiakiris [105], P.V. Tsiareshka [90], D. Tsionou [138], G. Tsipolitis [9],
V. Tsiskaridze [51], E.G. Tskhadadze [51], I.I. Tsukerman [95], V. Tsulaia [122], J.-W. Tsung [20], S. Tsuno [66],
D. Tsybychev [146], J.M. Tuggle [30], M. Turala [38], D. Turecek [126], I. Turk Cakir [3e], E. Turlay [105], P.M. Tuts [34],
M.S. Twomey [137], M. Tylmad [144a,144b], M. Tyndel [128], D. Typaldos [17], H. Tyrvainen [29], E. Tzamarioudaki [9],
G. Tzanakos [8], K. Uchida [115], I. Ueda [153], M. Ugland [13], M. Uhlenbrock [20], M. Uhrmacher [54], F. Ukegawa [158],
G. Unal [29], D.G. Underwood [5], A. Undrus [24], G. Unel [161], Y. Unno [66], D. Urbaniec [34], E. Urkovsky [151],
P. Urquijo [49,x], P. Urrejola [31a], G. Usai [7], M. Uslenghi [118a,118b], L. Vacavant [83], V. Vacek [126], B. Vachon [85],
S. Vahsen [14], C. Valderanis [99], J. Valenta [124], P. Valente [131a], S. Valentinetti [19a,19b], S. Valkar [125],
E. Valladolid Gallego [165], S. Vallecorsa [150], J.A. Valls Ferrer [165], R. Van Berg [119], H. van der Graaf [105],
E. van der Kraaij [105], E. van der Poel [105], D. Van Der Ster [29], B. Van Eijk [105], N. van Eldik [84],
P. van Gemmeren [5], Z. van Kesteren [105], I. van Vulpen [105], W. Vandelli [29], G. Vandoni [29], A. Vaniachine [5],
P. Vankov [73], F. Vannucci [78], E. Varela Rodriguez [29], R. Vari [131a], E.W. Varnes [6], D. Varouchas [14],

Z. Zhao [32b], A. Zhemchugov [65], S. Zheng [32a], J. Zhong [149,z], B. Zhou [87], N. Zhou [34], Y. Zhou [149], C.G. Zhu [32d],
H. Zhu [41], Y. Zhu [170], X. Zhuang [98], V. Zhuravlov [99], B. Zilka [143a], R. Zimmermann [20], S. Zimmermann [20],
S. Zimmermann [48], M. Ziolkowski [140], R. Zitoun [4], L. Živković [34], V.V. Zmouchko [127,*], G. Zobernig [170],
A. Zoccoli [19a,19b], Y. Zolnierowski [4], A. Zsenei [29], M. zur Nedden [15], V. Zutshi [5]

[1] University at Albany, 1400 Washington Ave, Albany, NY 12222, United States
[2] University of Alberta, Department of Physics, Centre for Particle Physics, Edmonton, AB T6G 2G7, Canada
[3] Ankara University[(a)], Faculty of Sciences, Department of Physics, TR 061000 Tandogan, Ankara; Dumlupinar University[(b)], Faculty of Arts and Sciences, Department of Physics, Kutahya; Gazi University[(c)], Faculty of Arts and Sciences, Department of Physics, 06500 Teknikokullar, Ankara; TOBB University of Economics and Technology[(d)], Faculty of Arts and Sciences, Division of Physics, 06560 Sogutozu, Ankara; Turkish Atomic Energy Authority[(e)], 06530 Lodumlu, Ankara, Turkey
[4] LAPP, Université de Savoie, CNRS/IN2P3, Annecy-le-Vieux, France
[5] Argonne National Laboratory, High Energy Physics Division, 9700 S. Cass Avenue, Argonne, IL 60439, United States

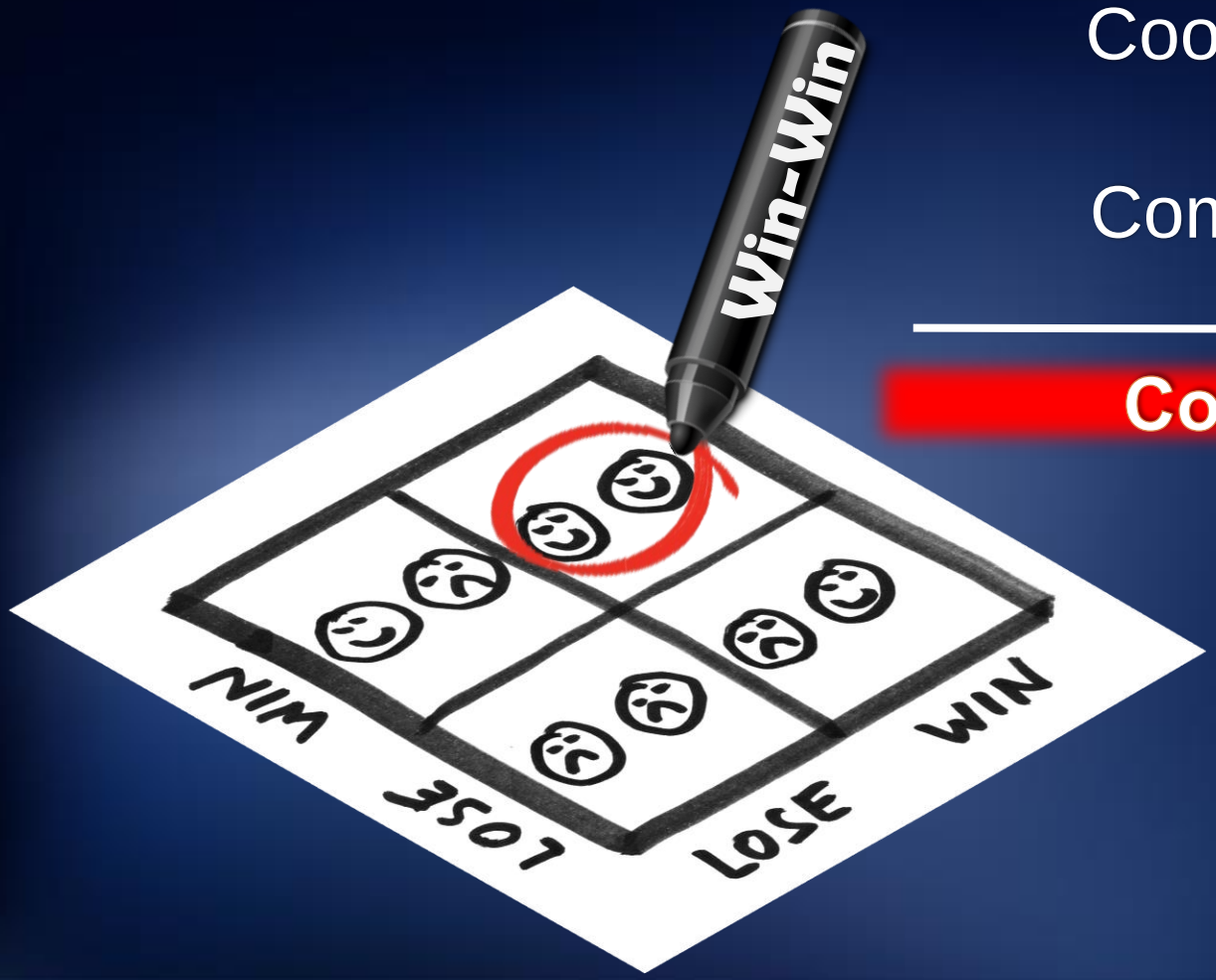
[63] University of Iowa, 203 Van Allen Hall, Iowa City, IA 52242-1479, United States
[64] Iowa State University, Department of Physics and Astronomy, Ames High Energy Physics Group, Ames, IA 50011-3160, United States
[65] Joint Institute for Nuclear Research, JINR Dubna, RU-141 980 Moscow Region, Russia
[66] KEK, High Energy Accelerator Research Organization, 1-1 Oho, Tsukuba-shi, Ibaraki-ken 305-0801, Japan
[67] Kobe University, Graduate School of Science, 1-1 Rokkodai-cho, Nada-ku, JP - Kobe 657-8501, Japan
[68] Kyoto University, Faculty of Science, Oiwake-cho, Kitashirakawa, Sakyou-ku, Kyoto-shi, JP - Kyoto 606-8502, Japan
[69] Kyoto University of Education, 1 Fukakusa, Fujimori, fushimi-ku, Kyoto-shi, JP - Kyoto 612-8522, Japan
[70] Universidad Nacional de La Plata, FCE, Departamento de Física, IFLP (CONICET-UNLP), C.C. 67, 1900 La Plata, Argentina

[138] University of Sheffield, Department of Physics & Astronomy, Hounsfield Road, Sheffield S3 7RH, United Kingdom
[139] Shinshu University, Department of Physics, Faculty of Science, 3-1-1 Asahi, Matsumoto-shi, JP - Nagano 390-8621, Japan
[140] Universität Siegen, Fachbereich Physik, D-57068 Siegen, Germany
[141] Simon Fraser University, Department of Physics, 8888 University Drive, CA - Burnaby, BC V5A 1S6, Canada
[142] SLAC National Accelerator Laboratory, Stanford, CA 94309, United States
[143] Comenius University, Faculty of Mathematics, Physics & Informatics[(a)], Mlynska dolina F2, SK-84248 Bratislava; Institute of Experimental Physics of the Slovak Academy of Sciences, Dept. of Subnuclear Physics[(b)], Watsonova 47, SK-04353 Kosice, Slovak Republic
[144] Stockholm University, Department of Physics[(a)]; The Oskar Klein Centre[(b)], AlbaNova, SE-106 91 Stockholm, Sweden
[145] Royal Institute of Technology (KTH), Physics Department, SE-106 91 Stockholm, Sweden
[146] Stony Brook University, Department of Physics and Astronomy, Nicolls Road, Stony Brook, NY 11794-3800, United States
[147] University of Sussex, Department of Physics and Astronomy, Pevensey 2 Building, Falmer, Brighton BN1 9QH, United Kingdom
[148] University of Sydney, School of Physics, AU - Sydney NSW 2006, Australia
[149] Insitute of Physics, Academia Sinica, TW - Taipei 11529, Taiwan
[150] Technion, Israel Inst. of Technology, Department of Physics, Technion City, IL - Haifa 32000, Israel
[151] Tel Aviv University, Raymond and Beverly Sackler School of Physics and Astronomy, Ramat Aviv, IL - Tel Aviv 69978, Israel
[152] Aristotle University of Thessaloniki, Faculty of Science, Department of Physics, Division of Nuclear & Particle Physics, University Campus, GR-54124 Thessaloniki, Greece
[153] The University of Tokyo, International Center for Elementary Particle Physics and Department of Physics, 7-3-1 Hongo, Bunkyo-ku, JP - Tokyo 113-0033, Japan
[154] Tokyo Metropolitan University, Graduate School of Science and Technology, 1-1 Minami-Osawa, Hachioji, Tokyo 192-0397, Japan
[155] Tokyo Institute of Technology, 2-12-1-H-34 O-Okayama, Meguro, Tokyo 152-8551, Japan
[156] University of Toronto, Department of Physics, 60 Saint George Street, Toronto M5S 1A7, Ontario, Canada
[157] TRIUMF[(a)], 4004 Wesbrook Mall, Vancouver, B.C. V6T 2A3; York University[(b)], Department of Physics and Astronomy, 4700 Keele St., Toronto, Ontario, M3J 1P3, Canada
[158] University of Tsukuba, Institute of Pure and Applied Sciences, 1-1-1 Tennoudai, Tsukuba-shi, JP - Ibaraki 305-8571, Japan
[159] Tufts University, Science & Technology Center, 4 Colby Street, Medford, MA 02155, United States
[160] Universidad Antonio Nariño, Centro de Investigaciones, Cra 3 Este No.47A-15, Bogota, Colombia
[161] University of California, Irvine, Department of Physics & Astronomy, CA 92697-4575, United States
[162] INFN Gruppo Collegato di Udine[(a)]; ICTP[(b)], Strada Costiera 11, IT-34014 Trieste; Università di Udine, Dipartimento di Fisica[(c)], via delle Scienze 208, IT-33100 Udine, Italy
[163] University of Illinois, Department of Physics, 1110 West Green Street, Urbana, IL 61801, United States
[164] University of Uppsala, Department of Physics and Astronomy, P.O. Box 516, SE-751 20 Uppsala, Sweden
[165] Instituto de Física Corpuscular (IFIC), Centro Mixto UVEG-CSIC, Apdo. 22085 ES-46071 Valencia, Dept. Física At. Mol. y Nuclear, Univ. of Valencia, and Instituto de Microelectrónica de Barcelona (IMB-CNM-CSIC), 08193 Bellaterra Barcelona, Spain
[166] University of British Columbia, Department of Physics, 6224 Agricultural Road, CA - Vancouver, B.C. V6T 1Z1, Canada
[167] University of Victoria, Department of Physics and Astronomy, P.O. Box 3055, Victoria B.C., V8W 3P6, Canada
[168] Waseda University, WISE, 3-4-1 Okubo, Shinjuku-ku, Tokyo 169-8555, Japan
[169] The Weizmann Institute of Science, Department of Particle Physics, P.O. Box 26, IL 76100, Rehovot, Israel
[170] University of Wisconsin, Department of Physics, 1150 University Avenue, Madison, WI 53706, United States
[171] Julius-Maximilians-University of Würzburg, Physikalisches Institute, Am Hubland, 97074 Würzburg, Germany
[172] Bergische Universität, Fachbereich C, Physik, Postfach 100127, Gauss-Strasse 20, D-42097 Wuppertal, Germany
[173] Yale University, Department of Physics, P.O. Box 208121, New Haven, CT 06520-8121, United States
[174] Yerevan Physics Institute, Alikhanian Brothers Street 2, AM-375036 Yerevan, Armenia
[175] ATLAS-Canada Tier-1 Data Centre 4004 Wesbrook Mall, Vancouver, BC, V6T 2A3, Canada
[176] GridKA Tier-1 FZK, Forschungszentrum Karlsruhe GmbH, Steinbuch Centre for Computing (SCC), Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany
[177] Port d'Informacio Cientifica (PIC), Universitat Autonoma de Barcelona (UAB), Edifici D, E-08193 Bellaterra, Spain
[178] Centre de Calcul CNRS/IN2P3, Domaine scientifique de la Doua, 27 bd du 11 Novembre 1918, 69622 Villeurbanne Cedex, France
[179] INFN-CNAF, Viale Berti Pichat 6/2, 40127 Bologna, Italy
[180] Nordic Data Grid Facility, NORDUnet A/S, Kastruplundgade 22, 1, DK-2770 Kastrup, Denmark
[181] SARA Reken- en Netwerkdiensten, Science Park 121, 1098 XG Amsterdam, Netherlands
[182] Academia Sinica Grid Computing, Institute of Physics, Academia Sinica, No.128, Sec. 2, Academia Rd., Nankang, Taipei, Taiwan 11529, Taiwan
[183] UK-T1-RAL Tier-1, Rutherford Appleton Laboratory, Science and Technology Facilities Council, Harwell Science and Innovation Campus, Didcot OX11 0QX, United Kingdom
[184] RHIC and ATLAS Computing Facility, Physics Department, Building 510, Brookhaven National Laboratory, Upton, NY 11973, United States

[*] Present address FermiLab, United States.

Systematizing Serendipity?

Co-Innovation: Compete to Share



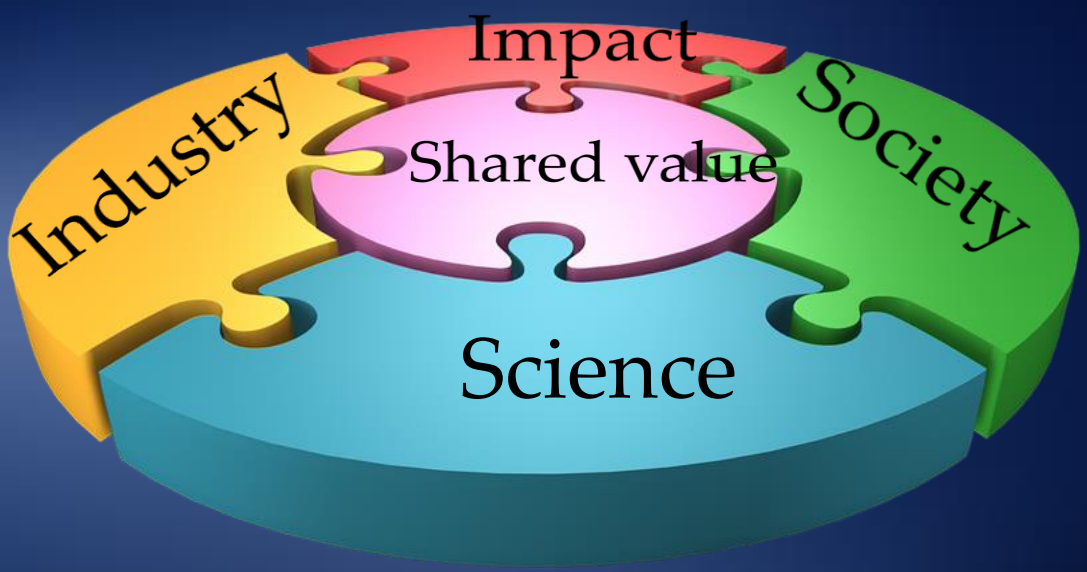
Cooperation

+

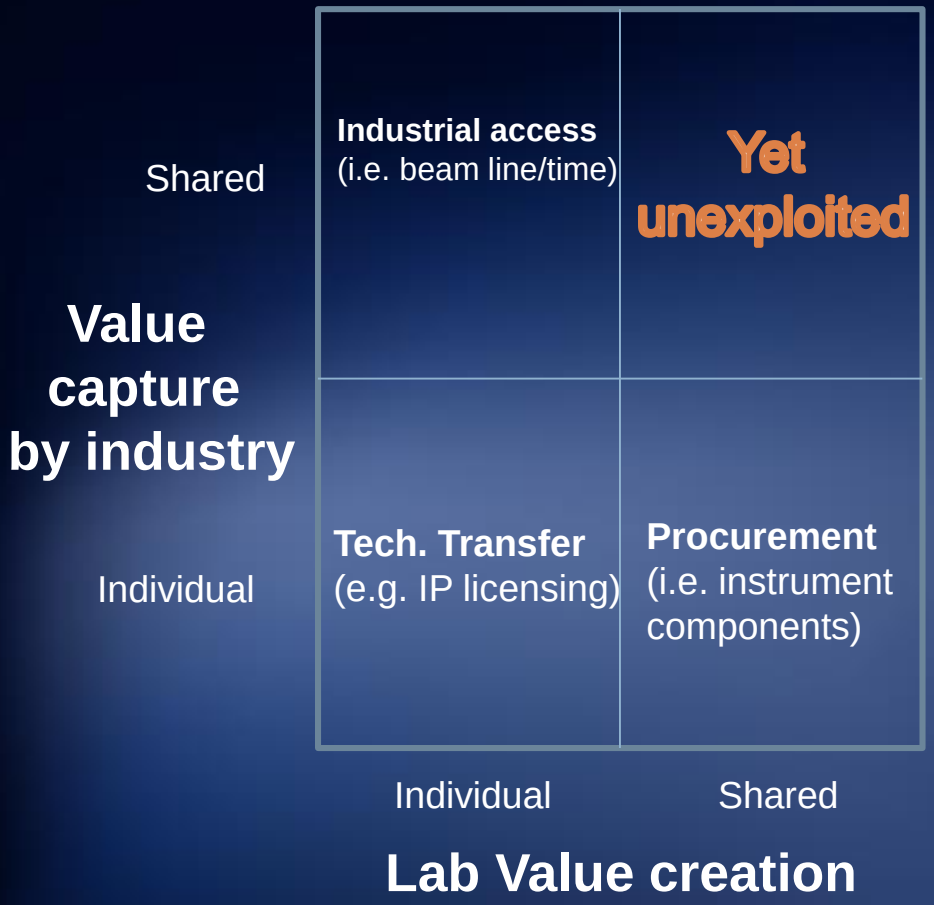
Competition

Co-Innovation

Co-Innovation:
- How Does Open Science Connect to Open Innovation?



By Creating *Shared* Value Opportunities



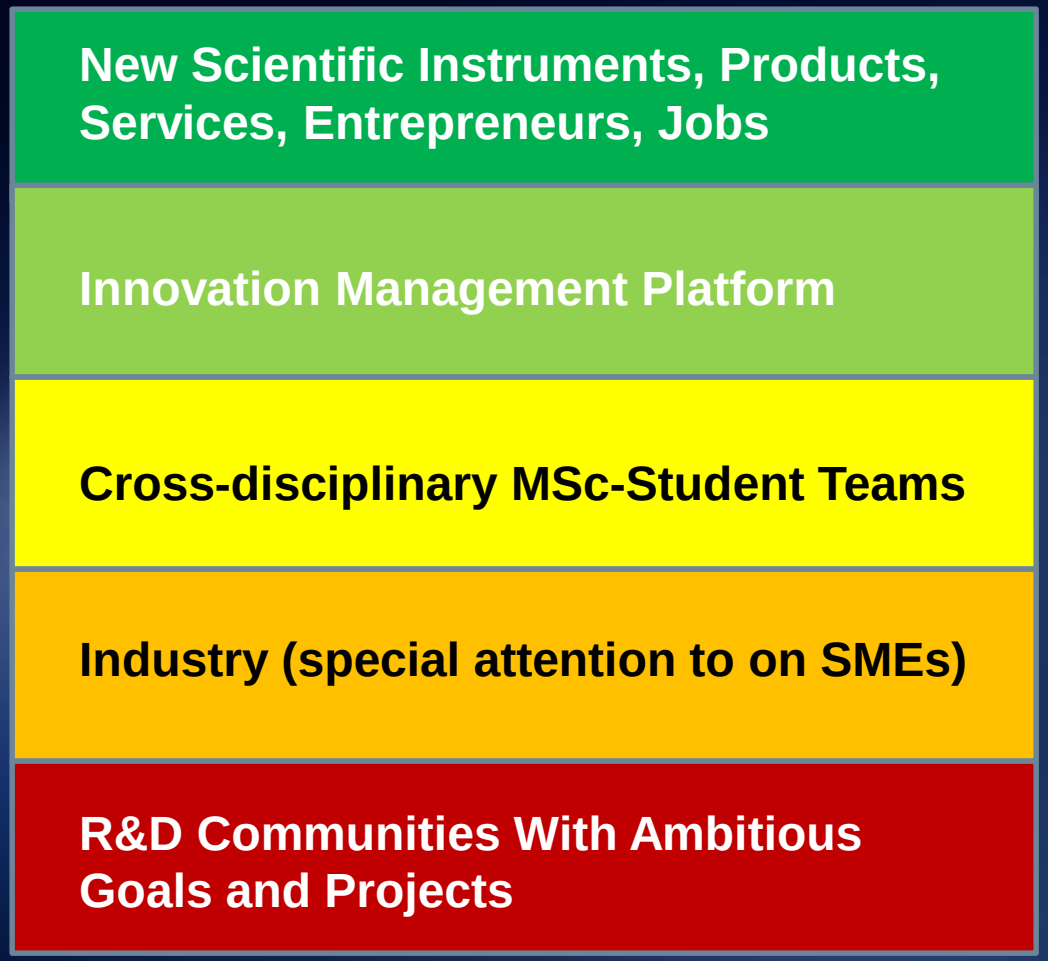
Shared value opportunities…

…but what does it mean?

- Create economic and social value while respecting Research Labs fundamental scientific mission.
- Fully exploit the synergies between national and international Research Labs.
- Enhance existing (local) industrial collaborations and foster new (global) ones.

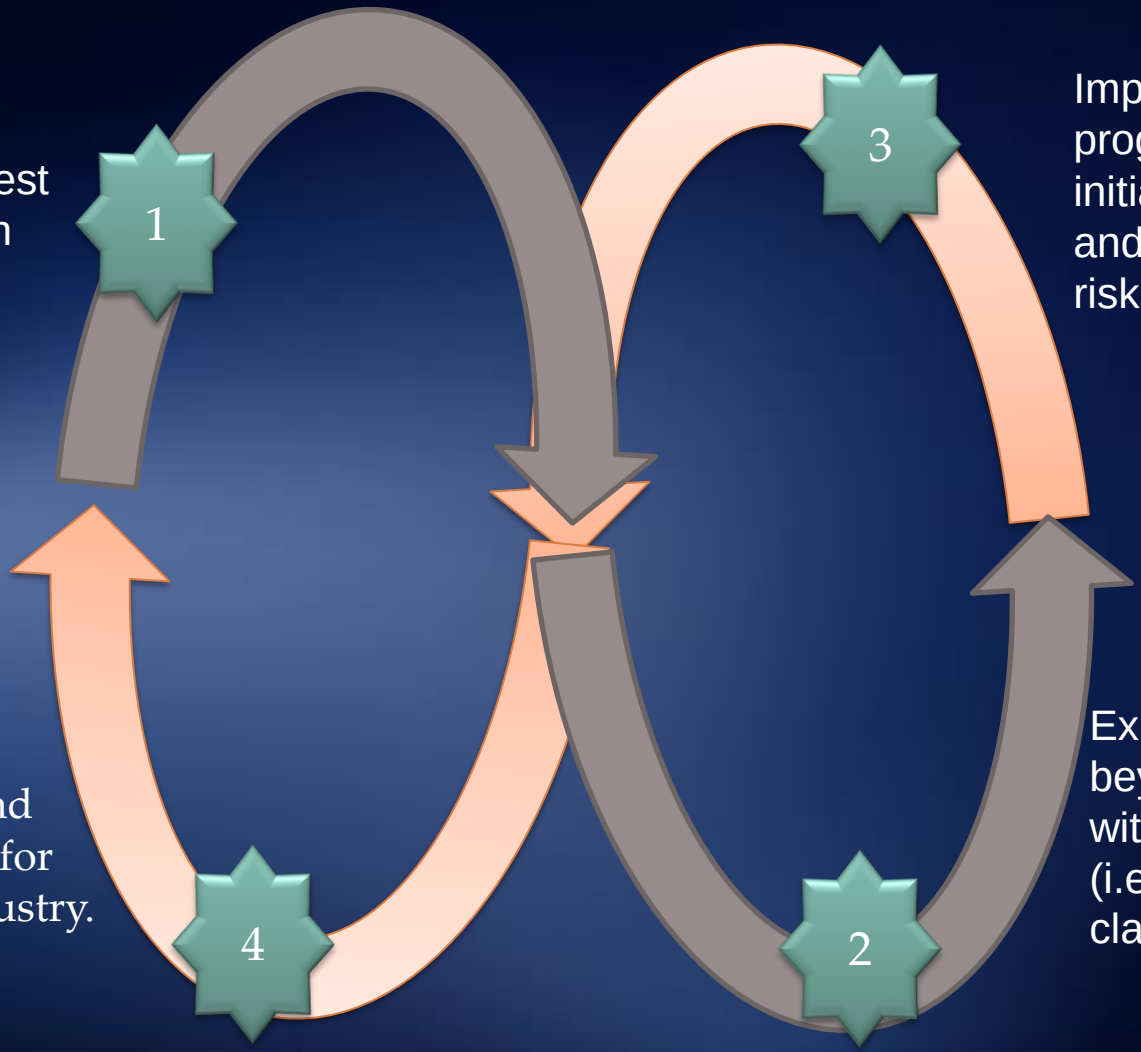
Figure adapted from Henry W. Chesbrough and Melissa M. Appleyard, Open Innovation and Strategy, *California Management Review* Vol. 50, No. 1, 2007.

It is About Creating an Innovation Ecosystem…



Implementing a Shared Value Approach: Basic Cycle Elements

Identify common horizontal technological interest areas for Research Labs and industry (e.g. detection and imaging).

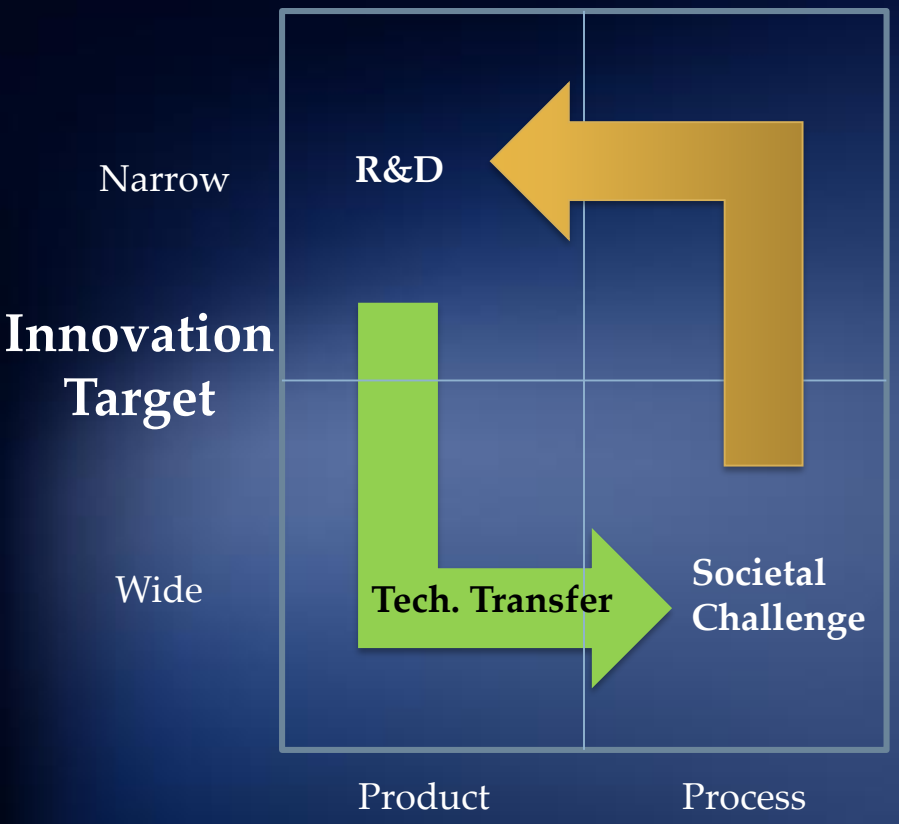


Implement bottom-up programmes in which initial technological and commercialization risks are absorbed.

Explore relationships beyond traditional ones with industry (i.e. co-innovation vs. classical buyer/supplier).

Scale up private and public investment for both Labs and industry.

IdeaSquare@CERN: Testing in Practise for OS-OI



IdeaSquare Approach

Publicly funded R&D detection and imaging projects - co-innovation with industry; applying open innovation principles.

Feeding Societal Challenges back to R&D, industrial and business value – using Design Thinking methodology and MSc interdisciplinary student teams.

More than 500 MSc students since 2014 and 50% rate of demonstrated interest in entrepreneurship.

http://www.attract-eu.org/

Can Science And Industry-Driven Cycles Coexist?

http://www.cern.ch/ideasquare

Experimenting at IdeaSquare

- Dedicated location at CERN that hosts and facilitates detector R&D-related activities and facilitates cross-disciplinary MSc-level student projects focusing on societal challenges. Demonstrator for ATTRACT
- IdeaSquare provides technical support facilities (“innovation in the making”)
  - Rapid prototyping (within 7 meters, 7 seconds)
  - Mechanical, electronics labs, cleanroom for advanced assemblies
- The R&D projects include e.g. semiconductor sensors, THz-electronics and augmented reality technologies
- The MSc-student projects are part of Design Thinking-inspired Challenge Based Innovation Program (CBI)
  - MSc students from six countries, teams from product design, business management and engineering students
  - Society-driven challenges (not physics!)
- Results are published in a new, dedicated on-line journal CIJ
  - http://cij-ei.web.cern.ch/CIJ-EI/

ATTRACT Phase 1 Has Started in August 2018

Interested applicants need to submit to open call. The call is open for submission until October 31st.

- Aiming at disruptive (co)innovation!
- An independent scientific committee (IC) will select 170 projects. IC will be formed of ~12 top experts on detection and imaging coming from academia and industry.
- The IC members can nominate anonymous reviewers to help with the proposal.
- Each selected project will receive 100 k Euros each (“lump sum”, seed fund) for max. 12 months to develop their idea/concept further for Phase 2.
- The aim is to obtain a broad geographical reach in Europe and encourage also smaller research groups or firms to apply (min. two partners, even from the same country).
- The progress of the projects will be monitored. After one year all funded projects will be called to a final ATTRACT Phase 1 Final Assessment Conference in Brussels to present their results.
- Note! None of the consortium organizations decide on which proposals will be selected for funding.

Experimenting at IdeaSquare

- Dedicated location at CERN that hosts and facilitates detector R&D-related activities and facilitates cross-disciplinary MSc-level student projects focusing on societal challenges.
- IdeaSquare provides technical support facilities (“innovation in the making”)
  - Rapid prototyping (within 7 meters, 7 seconds)
  - Mechanical, electronics labs, cleanroom for advanced assemblies
- The R&D projects include e.g. semiconductor sensors, THz-electronics and augmented reality technologies
- The MSc-student projects are part of Design Thinking-inspired Challenge Based Innovation Program (CBI)
  - MSc students from six countries, teams from product design, business management and engineering students
  - Society-driven challenges (not physics!)
- Results are published in a new, dedicated on-line journal CIJ
  - http://cij-ei.web.cern.ch/CIJ-EI/

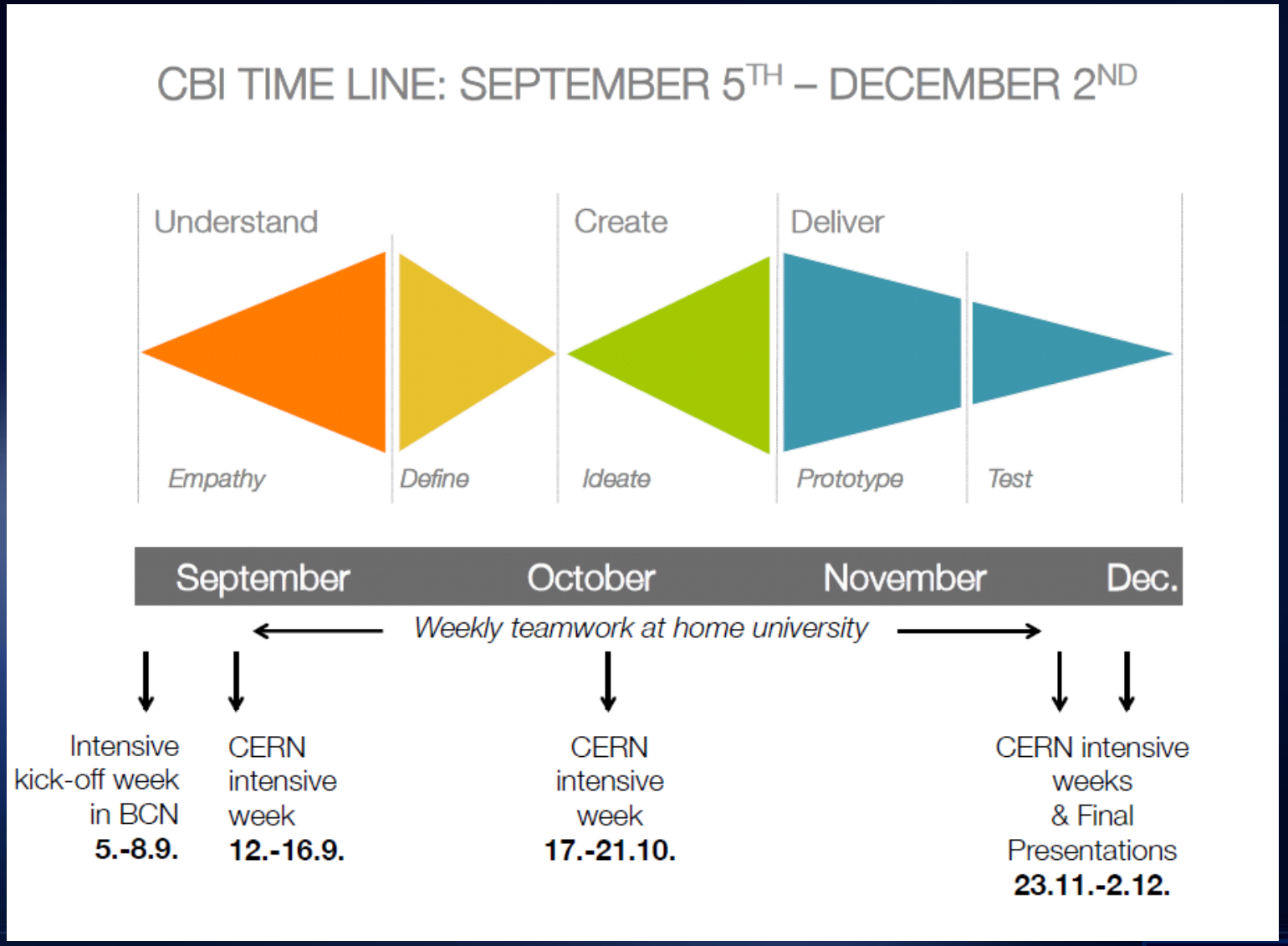
ATTRACT Phase 1 Has Started in August 2018

Interested applicants need to submit to open call. The call is open for submission until October 31st (www.attract.com)

- Aiming at disruptive (co)innovation!
- An independent scientific committee (IC) will select 170 projects. IC will be formed of ~12 top experts on detection and imaging coming from academia and industry.
- The IC members can nominate anonymous reviewers to help with the proposal.
- Each selected project will receive 100 k Euros each (“lump sum”, seed fund) for max. 12 months to develop their idea/concept further for Phase 2.
- The aim is to obtain a broad geographical reach in Europe and encourage also smaller research groups or firms to apply (min. two partners, even from the same country).
- The progress of the projects will be monitored. After one year all funded projects will be called to a final ATTRACT Phase 1 Final Assessment Conference in Brussels to present their results.
- Note! None of the consortium organizations decide on which proposals will be selected for funding.

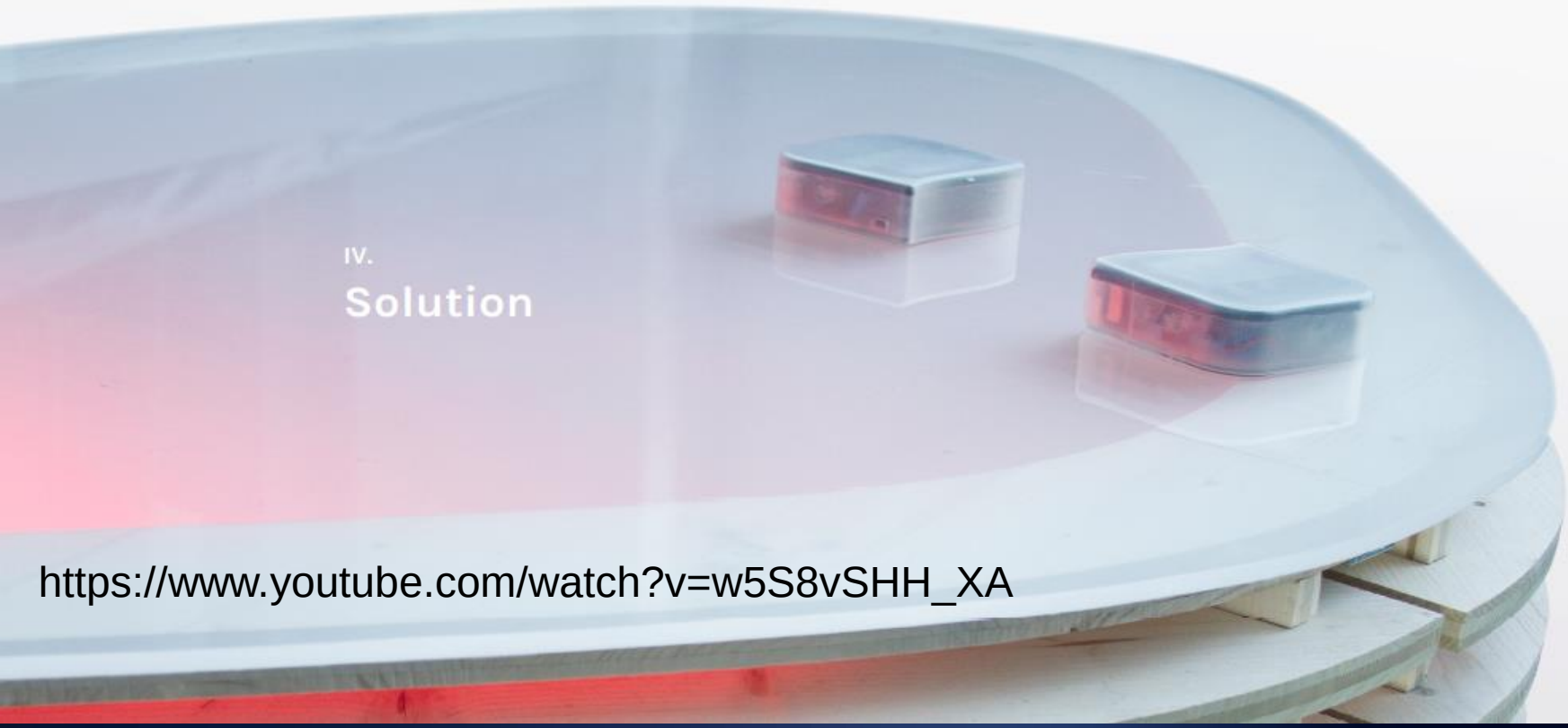
Strong Student Involvement, Inspired by Design Thinking

Sequence from Ideas to Innovation



EXAMPLES OF STUDENT PROJECTS

HELPING YOUNG AUTISTIC CHILDREN TO COMMUNICATE



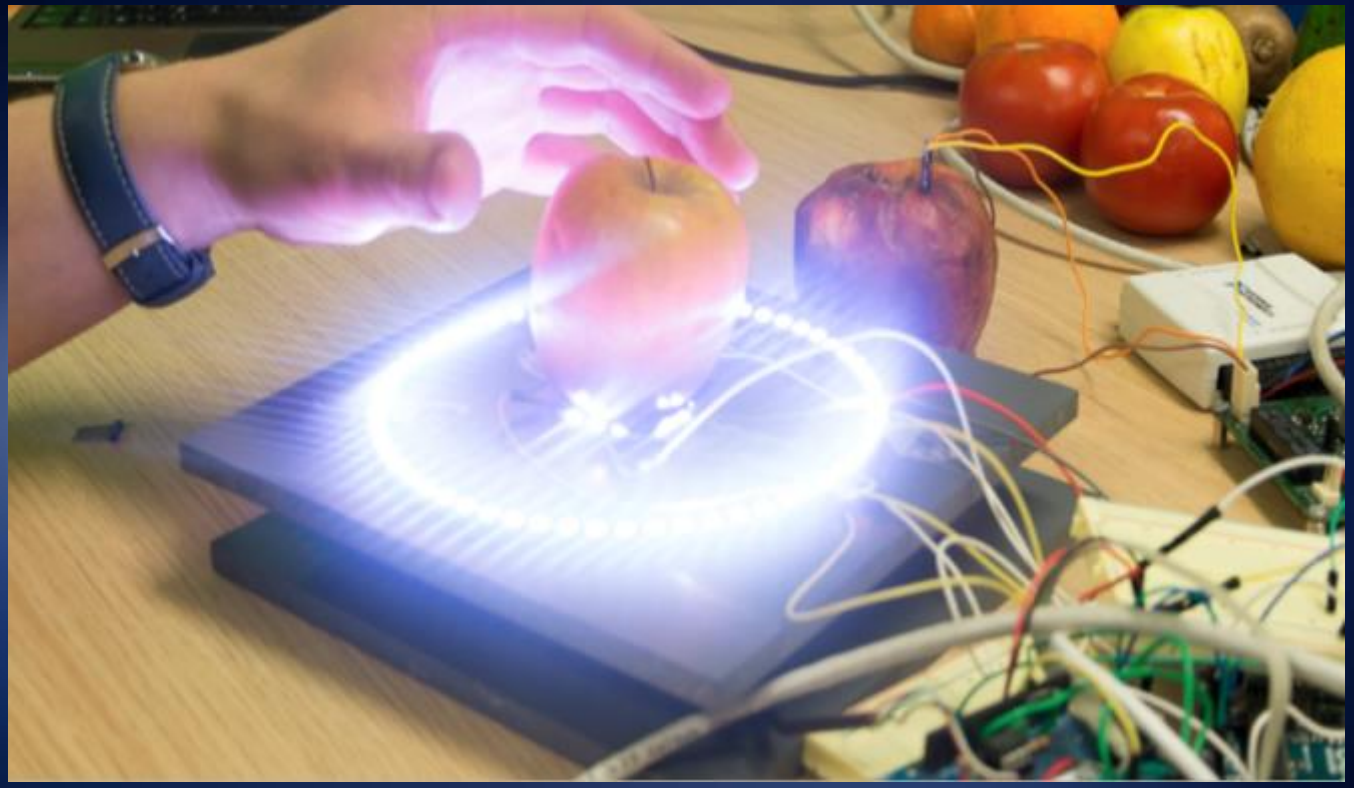
IV.

Solution

https://www.youtube.com/watch?v=w5S8vSHH_XA

PREVENTING HIP INJURY FROM INVOLUNTARY FALL

YOUR FRIDGE IS SENDING A MESSAGE WHEN FOOD IS RIPE TO EAT *FOR YOU*



Open Science, Open Innovation

http://cern.ch/ideasquare

Thank you