CDIO Introductory Programme

Session 4

CDIO Collaboration and Community

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INTRODUCTION SESSIONS

Session 1: Impact and Benefits of CDIO Approach to Engineering Education

Session 2: Using the CDIO Standards in Education Development

Session 3: Using the CDIO Syllabus in Educational Development

Session 4: CDIO Collaboration and Community

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Overview of the CDIO Introduction Sessions

Day 1 (Monday)

Session 1

Impact and Benefits of CDIO Approach to Engineering Education, introduces the CDIO initiative, clarifying its purpose, scope, and key resources. Participants gain an overview of how CDIO can enhance programmes and student learning through practical examples and case studies.

Day 1 (Monday)

Session 2

Using the CDIO Standards in Education Development, explores the CDIO Standards as a framework for curriculum design and evaluation. Participants learn to interpret and apply the standards to their teaching practices.

Day 1 (Monday)

Session 3

Using the CDIO Syllabus in Education Development, focuses on the structure and application of the CDIO Syllabus in curriculum planning. Participants practise linking syllabus elements to their course design and educational development initiatives.

Day 3 (Wednesday)

Session 4

CDIO Collaboration and Community, highlights strategies for adopting CDIO, including implementation timelines and early success tips. Emphasises collaboration within the CDIO community and the benefits of shared practices and continuous development.

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Introductory Programme
Objectives of Sessions

Impact and Benefits of CDIO Approach to Engineering Education	Using the CDIO Standards in Education Development	Using the CDIO Syllabus in Education Development	CDIO Collaboration and Community
• Participants will be able to explain the overarching purpose of CDIO Initiative • Participants will be able to describe how their programme and students might benefit from CDIO	• Participants will be able to explain the holistic nature and purpose of the CDIO Standards • Participants will be able to interpret and apply the CDIO Standards • Participants will be able to understand to what extent their current practice is similar to the CDIO Approach	• Participants will be able to explain the nature and purpose of the CDIO Syllabus • Participants will be able to understand how the CDIO Syllabus is organised and can be applied • Participants will be able to define connections between syllabus and their own educational designs	• Participants will be able to describe the nature of collaborative activities in CDIO and the associated benefits • Participants will be able to devise a broad timeline for their own adoption of CDIO

INTRODUCTION SESSION

4

What you do next

22nd CDIO International Conference

Liverpool — you're already part of the community

OPENING

Sessions 1–3 explored CDIO. *This one is about you.*

THIS SESSION

What we're here to do

- Get started with CDIO — with the community alongside you
- Reflect on your own context, programme, and role
- Walk away with a concrete next step

THE HONEST TRUTH

You don't need to have it figured out

- CDIO is most valuable at the beginning — uncertainty is exactly the right starting point
- No one here has the complete picture either

A REFRAME

A menu, not a recipe

- CDIO is a community of practice — you learn by contributing, not just consuming
- No single right path — by the end of today, you'll know what fits your context

- **Already in the room**
  Being at this conference means you're already engaged — that counts for more than you think
- **Your context is the starting point**
  Every school, every programme, every person here brings a different lens — that's the point
- **One actionable idea**
  That's the goal for today — not a plan, not a commitment. Just one thing worth trying

The CDIO Ecosystem

More than 200 collaborating institutes worldwide

Regions:

- North America
- Latin America
- UK – Ireland
- Europe
- Asia
- Australia & New Zealand
- Africa

How the community is organised

The International Conference
- Held annually, rotates globally
- Mix of papers, workshops & working sessions
- Welcoming to first-time attendees and newer schools
- See the work, meet the people, all in one place

Regional meetings
- Smaller, more informal, geographically clustered
- Closer to home — shared context, stronger connections
- Lower barrier to attend – often 1/2-day
- Check with your regional CDIO leader

Working meetings
- Targeted collaboration: building outputs, co-authoring resources, advancing standards
- Invitation-based, but open — relevant to your work, just ask

Online Leaders' meetings
- Regular touchpoint for CDIO member school leads
- Your institutional lead gets access from day one
- Year-round engagement without the travel

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For more details: Handbook - CDIO Collaboration and Community Activities

What's in it for different roles

For a Lecturer or Unit/Module leader:

- Access to a global pool of teaching approaches, assessments and learning activities, tried and evaluated in engineering programmes
- Peer connections with people teaching similar content at other institutions — especially valuable in specialist disciplines where local colleagues are scarce
- CDIO conference papers count as education research outputs, supporting professional development and promotion cases

For a Programme Director or Curriculum Lead:

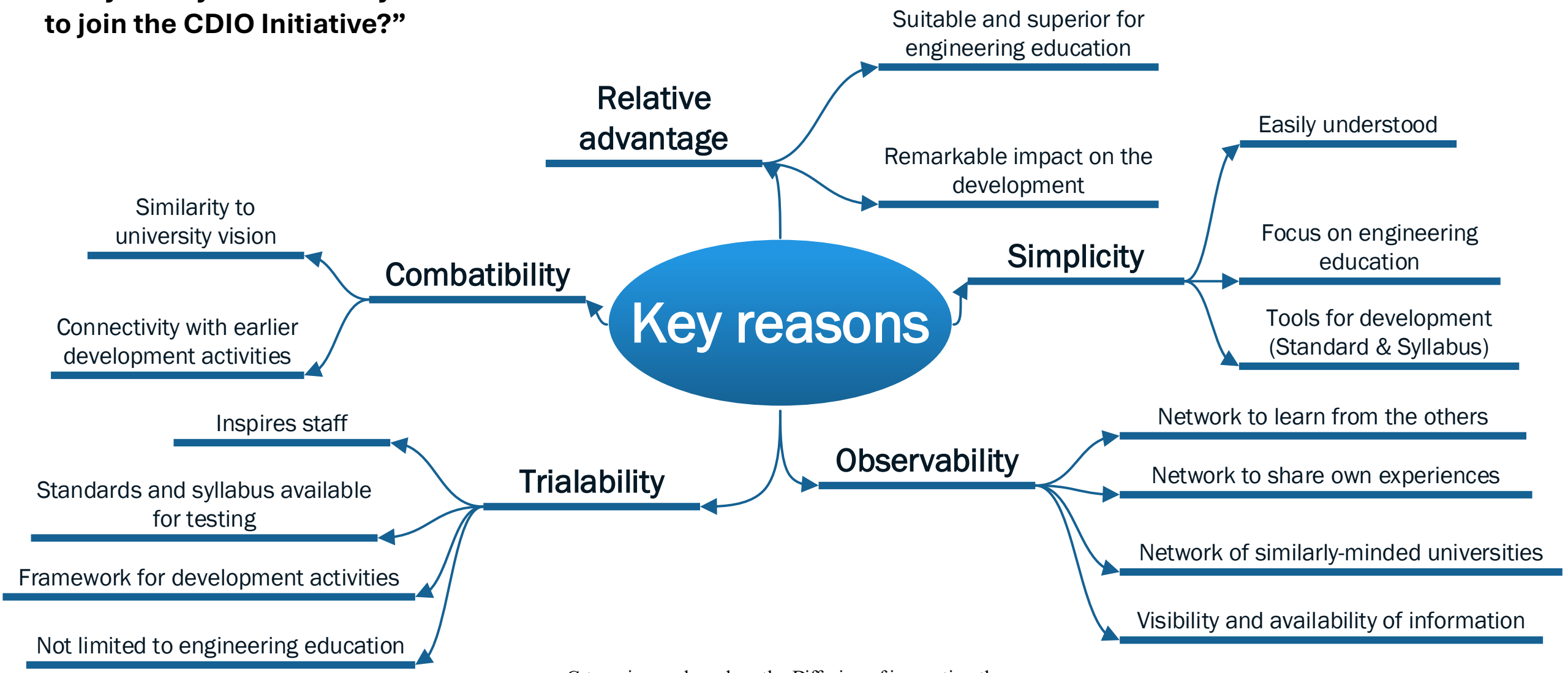
- The Standards self-evaluation offers a structured, evidence-based way to identify gaps and priorities — usable internally before any formal membership commitment
- Peer institutions available for informal benchmarking and advice, particularly those who have recently undergone similar curriculum reform
- Working groups keep you ahead of where engineering education is heading, not just where it is now

For a Head of department or Dean:

- Accreditation alignment — CDIO membership and the Standards framework are increasingly recognised by accreditation bodies as evidence of systematic quality assurance
- Staff development — CDIO engagement provides teaching staff with a genuine international professional development pathway
- Institutional profile — hosting a regional meeting, co-authoring a publication, or sending staff to the conference all contribute to international reputation in engineering education

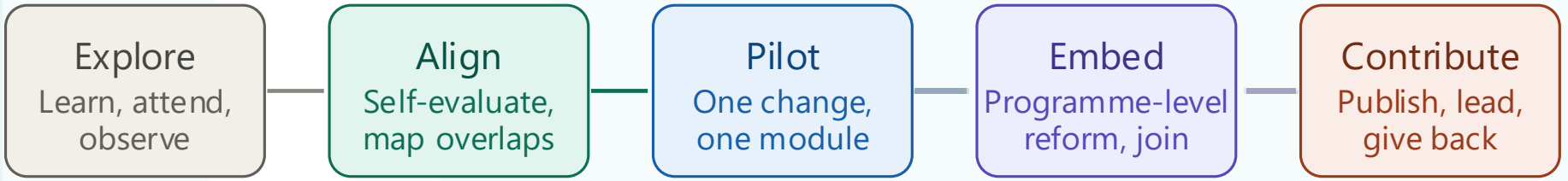
Based on 55 CDIO applications from 2010 to 2016

“Why does your university want to join the CDIO Initiative?”



Categories are based on the Diffusion of innovation theory (Rogers, 1995)

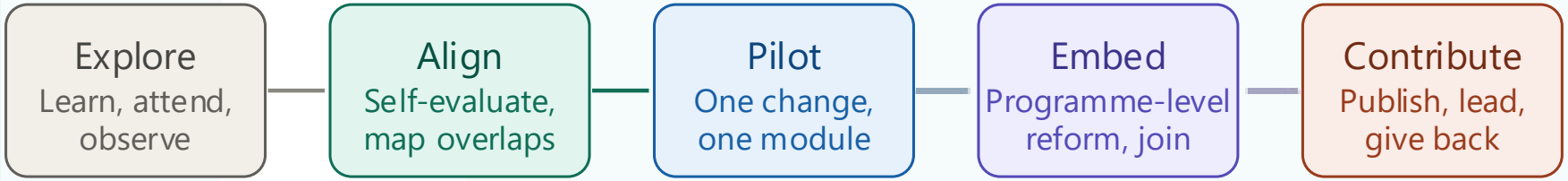
The CDIO journey – explore to contribute



Explore: You're already doing this – you're here today. Exploring means learning what CDIO actually is, attending introductory events, reading papers from the knowledge library, talking to people who've been through it. The goal at this stage is orientation, not commitment. You're asking: is this relevant to us?

Align: Turn the lens on your own programme. The CDIO Standards self-evaluation tool helps you map current practice and spot where you're already doing CDIO-aligned work – without necessarily calling it that. Most schools are closer than they realise. Alignment is about seeing those overlaps clearly and choosing which gaps to prioritise

The CDIO journey – explore to contribute



Pilot: Pick one thing - one module, one assessment approach, one active learning activity. Implement, evaluate, reflect. This stage matters most: it generates real evidence from your own students, builds internal credibility, and gives you a successful case to point to when making the argument for programme-level change

Embed: This is where CDIO shifts from discretionary to structural — built into curriculum design, programme outcomes, and assessment frameworks. It's also typically when formal membership makes sense, as you now have enough to fully benefit from collaboration

Contribute: This happens sooner than you'd expect. A paper, a workshop session, a case study, hosting a regional meeting, joining a working group. The community genuinely needs newer schools' perspectives. Your fresh eyes on the framework are an asset, not an afterthought.

The two case studies

Case study A: starting with workspaces (Standard 6)

- A Scandinavian engineering school chose **the physical learning environment** as their entry point into CDIO
- A new building gave them the opportunity — they used the CDIO workspace standards to design studios and labs around integrated, project-based learning
- The curriculum and assessment stayed the same — only the spaces changed
- The environment created its own momentum — students and staff began teaching and learning differently because the space expected it
- Within three years, the school was running a full programme reform

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The two case studies

Are we actually producing well-rounded engineers?

Case study B: starting with learning outcomes (the Syllabus)

- A teaching-focused polytechnic started with the CDIO Syllabus and used it to audit their graduate outcomes
- Mapping programme-level outcomes against the Syllabus revealed significant gaps in professional skills — teamwork, communication, and ethics
- Rather than overhauling the curriculum, they identified two existing modules where those skills could be made explicit and assessed
- The approach was small, targeted, and evidence-based
- Three years later, those two modules had grown into a professional skills thread woven through every year of the programme

In conclusion…

Two completely different starting points
Two completely different change processes
Both genuinely CDIO…

It is a menu, not a recipe

Rich enough framework to meet you wherever you are

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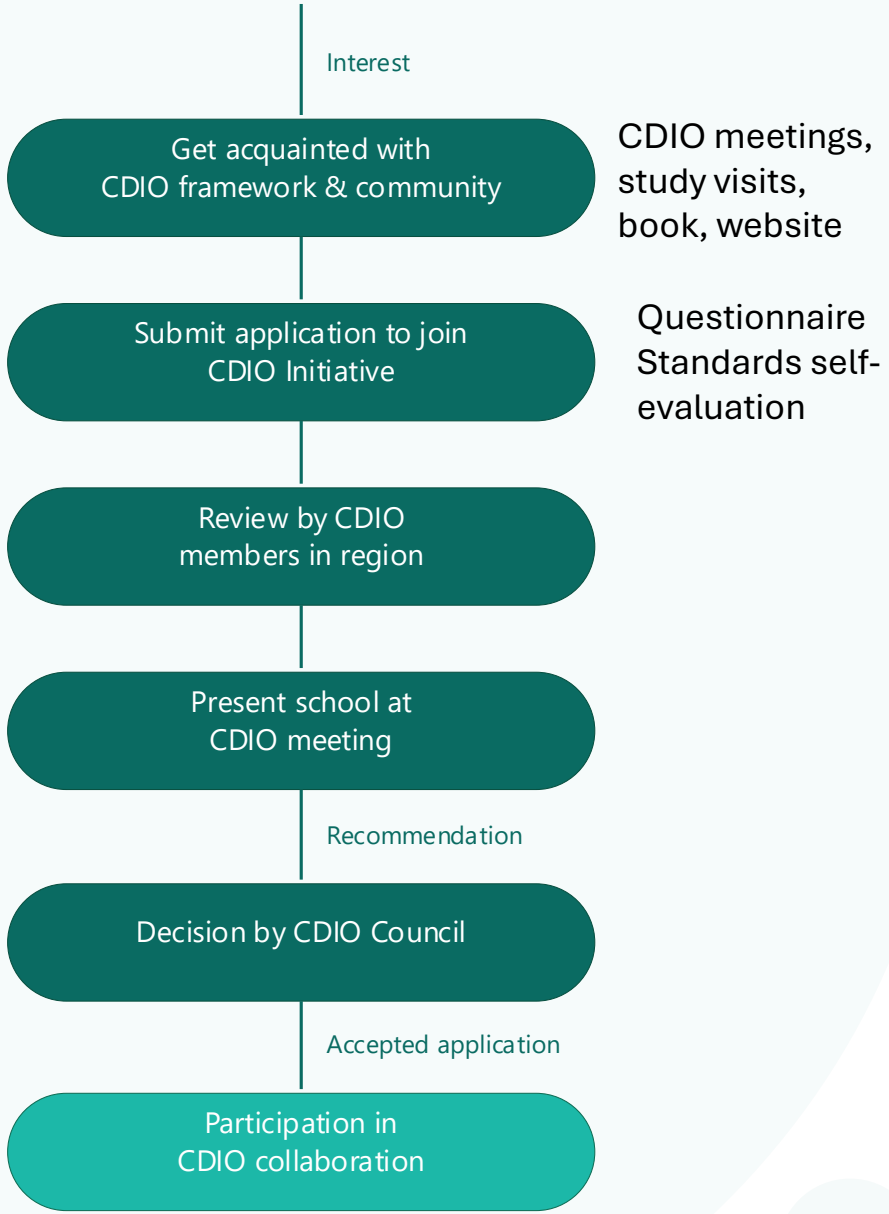
How to join

- Membership is at the institutional level, not individual.
- The process: letter of intent + a brief description of your programme and your interest in CDIO + a self-evaluation + a commitment to be active
- Not all your engineering departments have to align to the CDIO framework
- The join page on CDIO website - cdio.org/participate/join-cdio



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See: Handbook – Hints and Tips for early success

Activity 1 - instructions

- Turn over the card in front of you - 3 simple questions
- Be honest about your programme's current reality, not its ideal!!!
- 5 minutes alone – no discussion – just you and the card
- Pair up with someone nearby (ideally from a different institution)
- Stress-test each other's thinking
- We'll hear a few insights from the room
- The card is yours to keep

Turn them over now!

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The 3 questions on the card

1

What is the single biggest challenge your programme faces right now?

Be specific — not "we need to improve student outcomes." What is the actual problem underneath that?

2

Which part of the CDIO menu could most directly help with that challenge in the next 90 days?

It might be a Standards self-evaluation. A Syllabus mapping exercise. A single module redesign. A conversation with a peer institution. Choose something real and doable — not aspirational.

3

Who could support you?

Someone in this room. Someone in the CDIO network. A colleague back home. Name them if you can.

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Activity 2 - instructions

- Please refer to Activity 2 in the Handbook **"Planning your own next steps"**
- 5 minutes alone – no discussion – just you and your ideas
- ***What sort of support, advice, guidance and information might help you as you learn more about CDIO and begin to apply it?***
- Pair up with someone nearby and share

See: Handbook – Hints and Tips for early success & Getting started with CDIO: a practical roadmap

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Future of CDIO

The CDIO Activity Plan

- Multiple workstreams running in parallel
- Future-proofing the CDIO framework
- Grounding the standards in real-world realities
- Adapting to transformative global shifts

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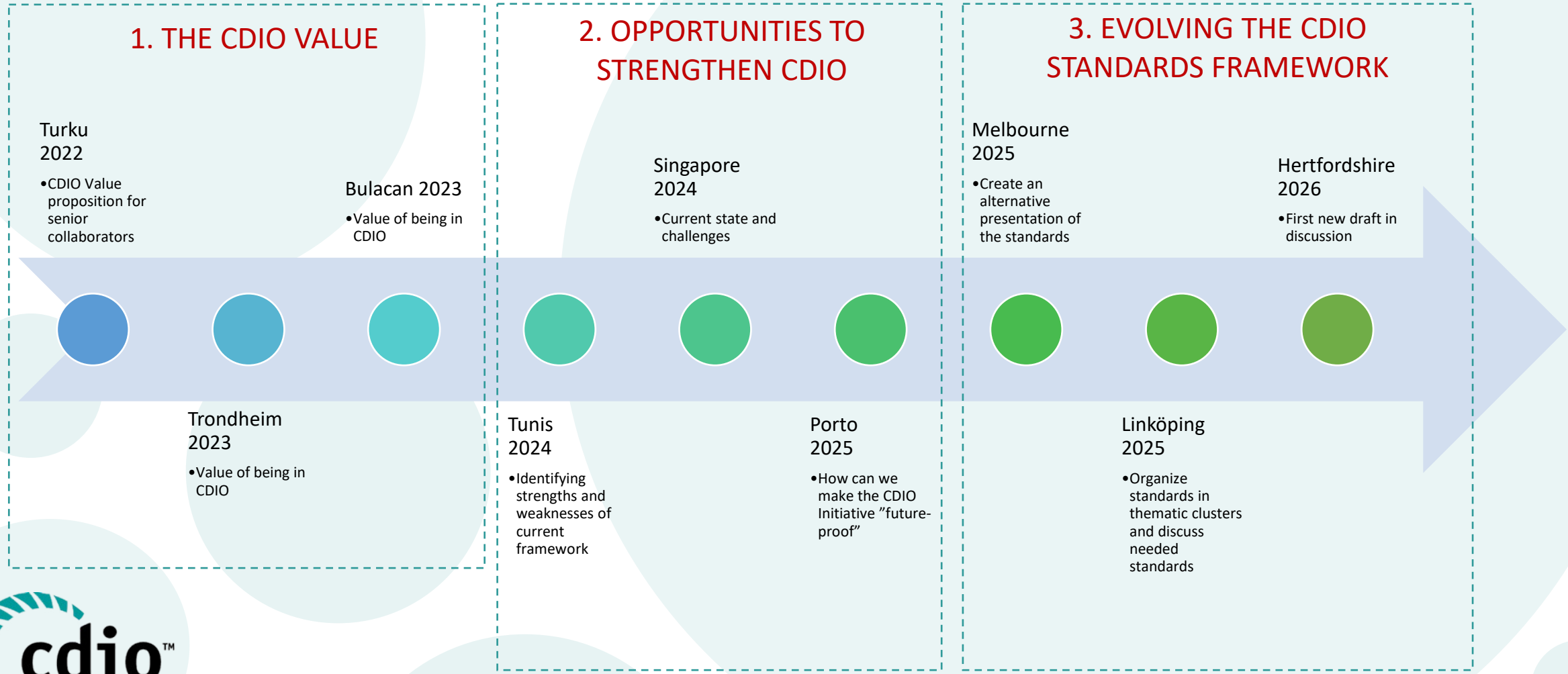
The Future of CDIO Sessions



CDIO 4.0

New Standard Framework — Corresponding CDIO 3.0 Standards & Key Differences

New Standard Framework Element	Corresponding CDIO 3.0 Standard(s)	Key Differences / Expansions
Context & Purpose	1 (Context)	Expanded to define institutional mission and rationale for engineering education.
Organizational Leadership & Governance	NEW	New explicit standard for responsive administration, resource allocation, and change culture.
Program Evaluation	12 (Program Evaluation)	Systematic evaluation and continuous improvement with stakeholder feedback.
Learning Outcomes	2 (Learning Outcomes)	Outcome-based education, including disciplinary knowledge and CDIO skills.
Integrated Curriculum & Agility	3 (Integrated Curriculum)	Curriculum flexibility and mapping for emerging needs.
Design–Implement Experiences	5 (Design-Implement Experiences), 4 (Intro to Engineering)	Early orientation to engineering practice and progressive, challenge-based projects.
Pedagogy & Didactics	7 (Integrated Learning Experiences), 8 (Active Learning)	Student-centered, integrated learning methods.
Learning Workspaces & Environments	6 (Engineering Learning Workspaces)	Flexible physical, digital, and social spaces for collaboration and skill development.
Assessment	11 (Learning Assessment)	Valid and reliable evaluation of defined outcomes.
Student Engagement & Feedback	NEW	Systematic mentoring, guidance, and feedback incorporation.
Faculty & Stakeholder Competence	9 (Faculty Competence)	Expanded to include technicians and supporting stakeholders.
Faculty Teaching Competence	10 (Faculty Teaching Competence)	Strengthened focus on pedagogical skills and assessment reliability.
Engineering and Society	NEW (Add. Sustainability)	The societal, ethical, environmental, and economic impacts of engineering.
Engineering of the Future	NEW	Look towards future-oriented technical competence, adaptability, and lifelong learning.

CDIO Standards — *Evolution Draft 4*

Vision & Strategy

- Context & Purpose
- Organizational Leadership & Governance NEW
- Engineering and Society NEW
- Program Evaluation

Program & Curriculum Design

Curriculum Architecture

- Engineering of the Future NEW
- Learning Outcomes
- Integrated Curriculum & Agility
- Design–Implement Experiences

Teaching, Learning & Assessment

- Pedagogy & Didactics
- Learning Workspaces & Environments
- Assessment
- Student Engagement & Feedback NEW

Personnel Development

- Faculty & Stakeholder Competence
- Faculty Teaching Competence

Muddy cards –

Please give us feedback on today's session

On a GREEN post-it....

Write down the most valuable thing you gained from today's session.

On a YELLOW post-it....

Write down the thing that could be improved in the session.

Stick them on the wall on the way out.

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The CDIO community is as strong as the people who show up for it.

We hope you'll be among them