

C-PIC Theory of Change

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Reading the Theory of Change

Activities are organised under C-PIC's strategic priority areas and linked to the objectives of **Champion, Cultivate**, and **Translate**.

Each activity connects to outputs (direct results), which in turn lead to emerging outcomes, short-term outcomes, and mid-term outcomes. Long-term outcomes are not included, as this Theory of Change focuses on the 5-year funding period. Impact areas describe where broader contributions are expected beyond 2030.

The ToC shows the expected pathways of change rather than following a strict timeline. Activities, outputs, and outcomes may occur at different points during the strategy period (e.g. some in Year 1, others in Year 3).

Colour key and strategy area*

-  Scientific Strategy
-  Career Development Strategy
-  RRI Strategy (cross-cutting principle)
-  Commercialisation Strategy
-  EDI Strategy (cross-cutting principle)
-  Communication Strategy

**Each activity, output and outcome is colour-coded to show which strategic area it relates to*

INPUTS	ACTIVITIES	OUTPUTS	EMERGING OUTCOMES	SHORT-TERM OUTCOMES	MID-TERM OUTCOMES	2030	AREAS OF IMPACT
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FUNDING OUR VALUES	CHAMPION the use of Si-PIC & its community	Convene Si-Ph stakeholders Si-Ph community connected Established networks with industry, academics, foundries, accelerators, founders, funders, mentors, system integrators Inclusive, representative events and outreach attracting diverse audiences	Exchange of knowledge, ideas, and methodologies enabled Barriers to EDI better understood	Possibilities for advancing the field and delivering impact exploited Take action to remove barriers	Innovation and commercialisation facilitated and outcomes enhanced Increased diversity of representation (e.g. equitable distribution of female and male speakers)	A pipeline of silicon photonics enabled companies serving multiple industry sectors underpinned by our open-source silicon photonics foundry	A cohesive Si-Ph community C-PIC known for skills, knowledge, and networking opportunities
		Launch an online Knowledge Hub Online Knowledge Hub established	Academia and industry use the Knowledge Hub as a resource for publicly available data, tools, and collaboration	Knowledge Hub regarded as a trusted, front door for the UK Si-Ph community Access to C-PIC resources and services are fair and inclusive	Inclusive innovation and knowledge democratisation supports accelerated adoption of SiPh		A trusted and respected centre where people are happy to work and Si-Ph community & industry are happy to engage with to advance the field
		Represent the interests of the Si-Ph Community Public engagement initiatives raising awareness and creating positive public perception	Engaging and accessible communication illustrates the benefits of Si-Ph for society	Visibility, capability and adaptability of silicon photonics well known including among underrepresented groups	Academic research aligns with industry demands, welcoming diverse perspectives		
		Deliver policy engagement Part of dialogue on science & tech policies and strategic priorities	Contribute to shaping national photonics policy and regulation	C-PIC is a valuable advisor and resource for policymakers	Si-Ph recognised as important asset to UK competitiveness (supports both economic and social progress)		C-PIC is established as a national asset

CORNERSTONE PARTNERS	TRANSLATE Si-PIC from research to industry	Launch open source Processing Design Kit (PDK) Strategic partnerships with PDK partners developed	Industry and academia gain improved access to design automation software	Capability and adaptability to develop use-cases demonstrated	Open-source silicon photonics solutions developed, tested and innovated	A pipeline of silicon photonics enabled companies serving multiple industry sectors underpinned by our open-source silicon photonics foundry	Scalable and adaptable photonics technologies are integrated into existing infrastructure and larger systems
		Deliver open source Si-photonics foundry Open source, open access principles & regulatory compliance are embedded in research and prototyping Sustainable innovation, manufacturing and supply chain management recognised as core pillars of our approach	Transparency and sustainability in fabrication processes improved Suppliers committed to ethical labour and environmental responsibility engaged	Foundry financial sustainability strengthened through consistent income growth Sustainable manufacturing processes embedded	Models for direct facility access for industry partners explored Efficient & environmentally friendly photonics technologies		Straightforward scale-up to commercial viability
		Collaborate with diverse interdisciplinary and international experts Industrial academic collaborations supported International expertise integrated into strategic advice streams Stakeholders regularly engaged and priorities aligned	Ecosystem of inclusive interdisciplinary researchers created Interdisciplinary collaboration between researchers, students and entrepreneurs encouraged	Knowledge democratisation enabling inclusive innovation	Collaborative ecosystem prioritising ethical practices and societal engagement Partner IP protected		Innovation developed to be commercially viable and socially responsible
		Monitor science and technology trends and identify priorities Government-defined Frontier Technologies prioritised Tech roadmaps for PICs developed and contributed to Foundry promoted at events for priority sectors	Si-Ph research aligned to address societal challenges Opportunities identified using existing roadmaps	Use cases developed in key target areas	Si-Ph solutions demonstrate potential to address societal challenges		Important societal challenges addressed through Si-Ph solutions

C-PIC TEAM	TRANSLATE Si-PIC from research to industry	Seek out funding opportunities Proposals developed for infrastructure (priority) and commercialisation investment	Funding acquired from diverse sources	Pipeline of talent	Start-ups secure follow-on funding and accepted onto major sector specific accelerators	Start-ups improve readiness for market entry	C-PIC emerging as a UK accelerator, enabling three spinouts
		Fund innovation & commercialisation projects Broad range of innovation and commercialisation projects funded	High potential SiPh solutions demonstrated in a variety of application areas		Enhanced awareness of commercialisation across the Si-Ph communities	Industry relevant demonstrators developed	Industry relevant demonstrators adopted
		Support start-ups with structured accelerator programme Si-Ph academic entrepreneurs participating in commercialisation activities	Offer a range of training to users Training programmes (PIC Boot Camp; summer school, hands on training etc) delivered to meet a range of needs		Embed best practice into operational procedures	Compliance with national security and export control regulations EDI efforts are continuously adapted and refined where (and if) relevant	Continuous rigorous financial and management practices to ensure efficiency and sustainability

KNOWLEDGE COMMUNICATION STRATEGY	CULTIVATE a positive work culture	Assess risk impacts of processes & practices Impact risks identified and mitigated (e.g. AREA framework, EDI impact assessment)	AREA framework applied and risks to trusted research acted on Coordinated to act on barriers and risks to EDI	Embed best practice into operational procedures	Compliance with national security and export control regulations EDI efforts are continuously adapted and refined where (and if) relevant	A pipeline of silicon photonics enabled companies serving multiple industry sectors underpinned by our open-source silicon photonics foundry	Continuous rigorous financial and management practices to ensure efficiency and sustainability
		Provide and promote professional development opportunities Colleagues access training, development and progression opportunities	Colleagues develop skills and knowledge fostering personal and professional growth Teams apply inclusive research design in proposals	Colleagues more satisfied and confident; experiencing improved personal development Colleagues have better understanding of personal aspirations and career prospects	Colleagues work/life balance enhanced Career storytelling showcasing diverse career paths and inclusive role models		C-PIC is a workplace of choice and an exemplar to other orgs. C-PIC is recognised as an inclusive employer and EDI leader, with a diverse, productive and creative team--driving innovative solutions

KNOWLEDGE COMMUNICATION STRATEGY	MONITOR & EVALUATE	Review inclusive processes & practices Processes and practices that drive equity and fairness in the workplace implemented	PhDs recruited from diverse backgrounds Current HR processes revamped and promotion frameworks are transparent and in line with EDI	Diverse perspectives are invited and valued Women, underrepresented groups and ECRs actively encouraged to apply for funding	Greater diversity of voices and experiences represented across C-PIC activities and decision-making	A pipeline of silicon photonics enabled companies serving multiple industry sectors underpinned by our open-source silicon photonics foundry	Inclusive stories of success (case examples) are shared
		Benchmark processes against best practice Appropriate comparators identified and baseline data collected	Processes proactively reviewed	Processes updated to align with optimal methods	Revised processes clearly communicated and practice embedded		Demonstrable meeting of relevant standards and potential to innovate new ways of working

A pipeline of silicon photonics enabled companies serving multiple industry sectors underpinned by our open-source silicon photonics foundry

A globally recognised leader in SiPh innovation with **overseas investment** and partners

Increased government & private investment for SMEs

UK polices support UK Si-PIC infrastructure

Contribution to net zero emissions

UK national security

UK economic growth

Equitable access to opportunities

UK technology leadership