

# Understanding the social system when embedding tech-supported curriculum design and approval

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To date no single model for the successful embedding or implementation of systems - of any type - has been proposed in the literature, despite the fact that user resistance is cited as the [principal cause of system implementation failure](#). Instead, literature emanating from the information systems domain proposes a number of strategies. In recent decades there has been a philosophical shift towards [participative embedding approaches](#) as the best way of executing system implementation. The typical components of a participative approach tends to include, among other things, [open or participative system design approaches](#), an emphasis on [extensive staff training or user support services](#), fluid staff-management-system team [communication](#), cognisance of the [organisational issues surrounding the embedding of new systems](#) and responding appropriately to the [cultural implications of system implementation](#). Of course, such participative approaches are normally most successful with [management endorsement](#). Even within the [Institutional Approaches to Curriculum Design Programme](#), projects such as [Supporting Responsive Curricula](#) (SRC) Project, cited the importance of senior university management support in expediting system embedding and curriculum change.

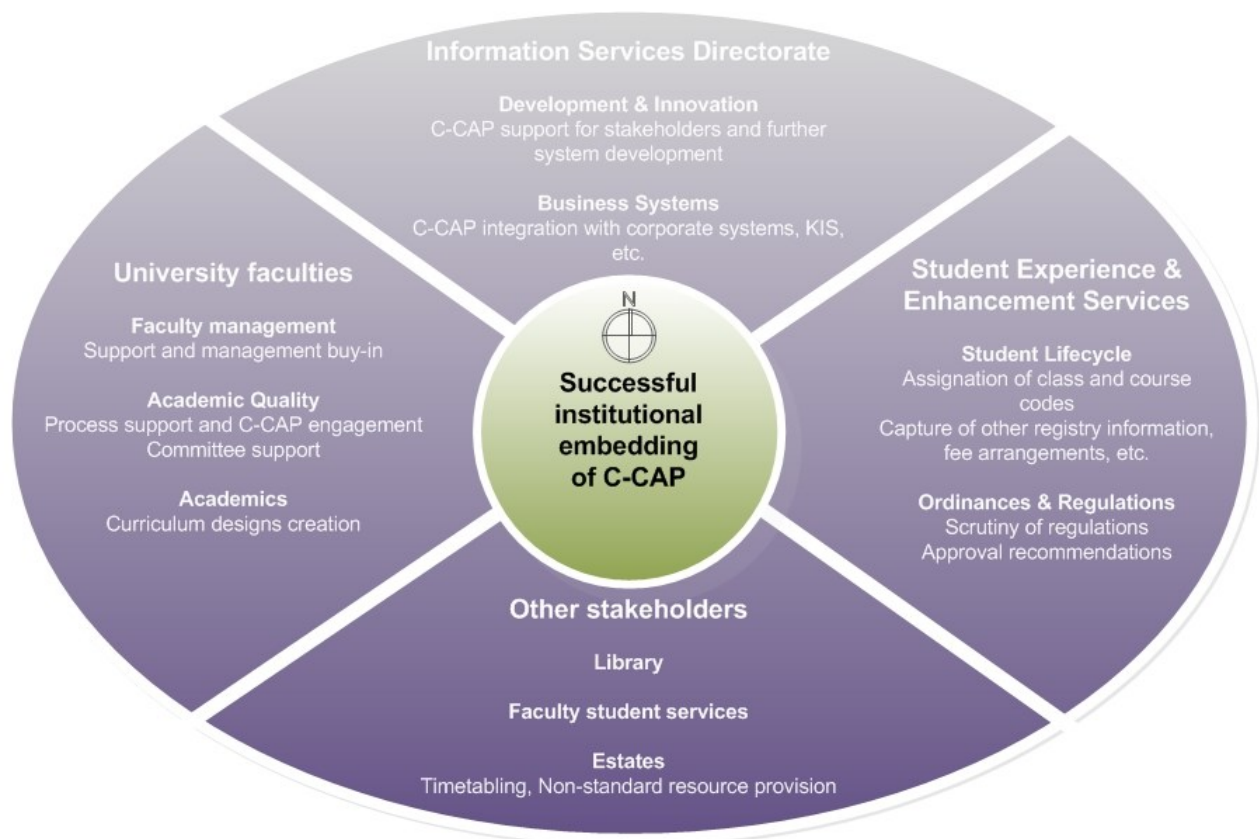
Like the information systems area more generally, few accepted models for embedding technology have been proposed by the learning technology and e-learning communities. A general criticism of this work is its failure to acknowledge or to learn from the extensive embedding and implementation literature that has emerged over several decades from the information systems domain. A number of strategies or approaches have nevertheless been proposed, most of which could be described as participative. A thorough review is available from the [C-CAP embedding and work plan](#). Examples include [Sharpe et al](#) who document the case study of the successful implementation of an institution-wide e-learning strategy at a UK university and identify faculty level e-learning champions, devolved e-learning strategies and targeted staff development to be critical in technology embedding success. [Lisewski](#) also notes the importance of the staff development process in delivering success, as well as "time and space" for staff to learn new skills and effective communication channels between stakeholders. Interestingly, understanding the peculiar cultural fragmentation of HE institutions is also considered by Lisewski to be the most fundamental aspect of achieving successful embedding. [Other research corroborates this cultural fragmentation](#), with university staff often considering themselves to be driven by individualistic concerns and not united by a single culture. Instead they tend to be united by their discipline, department, research group affiliations, and so forth, which themselves are too diverse and varied to be considered as subcultures. Although Lisewski stops short of proposing a strategy capable of solving this cultural anomaly, he acknowledges that a system embedding strategy must be tailored to accommodate the varying social cultures that can typify HE institutions. His conclusions nevertheless appear to reveal the merit of local champions or change agents, capable of understanding the cultural nuances of specific university departments or groupings.

All of this tends to highlight that embedding technology is inherently social; that the successful embedding of any information system, whether it is a curriculum design tool or a customer relationship management system within an international corporate behemoth, requires a clear understanding of the wider social system. The socio-technical issues involved in developing technology-supported curriculum design and approval tools [have been summarised elsewhere by Paul Bartholomew and Jim Everett](#); but such socio-technical interactions distend and assume a greater importance when managing implementation and embedding. The philosophical shift towards participative strategies is an acknowledgement of the socio-technical issues involved and reflects the view that organisations are social systems in which [information systems and humans are inexorably linked](#). Embedding of any new information system therefore requires cognisance of the [impact such a system will have on the wider social system](#).

Understanding social systems and their influence on information system implementation has long been identified as [a key determinant of success](#). User resistance has been linked to the social or "[organisational inertia](#)" that has been [shown to typify many organisations](#) and is often linked to the [wider political consequences of system implementation](#), particularly the politics of data. Indeed, aspects of "data politics" were found in [C-CAP user acceptance testing](#). [Besson and Rowe](#) review an extensive array of literature and identify several forms of inertia:

- **Psychological:** Characterised by denial and fear of learning; staff are overwhelmed by their negative emotions due to perceived threat.
- **Socio-cognitive:** Staff are entrenched within organisations and characterised by their "stickiness" due to norms and values re-enactment.
- **Socio-technical:** Staff are "embedded in socio-technical systems that have their own dynamics, especially due to development time and internal consistency".
- **Economic:** Staff are embedding within business models with their own dynamics arising from the implications of resource reallocation, and;
- **Political inertia:** Staff are part of a network of vested interests or alliances.

Pockets of political, socio-technical and socio-cognitive inertia - and the resistance stemming from this - were identified in PiP evaluation activity, particularly in WP7:37, 38 and 39 – and some of it was also [discussed previously](#). [Anecdotal evidence](#) from system piloting also appears to demonstrate levels psychological inertia.



Recognising the importance of the social system in successful implementation is therefore integral to designing an effective embedding strategy. Clearly there are many ingredients in an embedding strategy (e.g. the participative aspects mentioned above), but any strategy must be cognisant of the underlying inertia that can manifest itself in resistance. For a system attempting to facilitate wider organisational change, such as C-CAP, this becomes more difficult owing to the wide number of stakeholders involved and their responsibilities in making embedding a success. The diagram below (taken from the embedding plan) summarises the C-CAP scenario.

Achieving successful institutional embedding of C-CAP - as represented at the centre of the ellipse - entails engagement from the stakeholders within each of the cardinal directions (N, E, S, W). North, East and West includes numerous primary and key stakeholders and are therefore essential to embedding success. This is

manifest in their listed responsibilities, all of which are essential to the operation of curriculum approval processes. Though institutional embedding should ideally involve all cardinal directions to ensure effective embedding and maximum institutional impact, embedding can still enjoy a measure of success if South (Other Stakeholders) are unable to engage. South contains secondary stakeholders and – although their need for design and/or approval information is important – their interaction with the system is passive and not critical to curriculum design or approval.

But how does one manage meaningful organisational stakeholder engagement alongside an understanding of their peculiar social systems?

In PiP we have made use of [Keen's scenario-writing template](#) to highlight areas of potential stickiness. Based on [Bardach's](#) work within the area of "implementation games", Keen's seminal work presents a customised scenario-writing template for systems implementation based on his concept of "games". These games are characterised as counterimplementation tactics which are often used to resist, impede or wreck system implementation. Though the term "game" suggests - and includes - deliberate tactics that might be used to derail projects, Keen acknowledges that some games are subliminal, emanating from the wider social inertia that can pervade organisations. Keen's template provides a useful means of identifying risky areas of the embedding strategy that could be subject to gaming behaviour. The template helps to identify the nature of those games should they arise and, in turn, enables *countercounterimplementation* (CCI) strategies to be considered early in the embedding lifecycle. In essence, it can be used to better understand aspects of the wider social system and predict where inertia might be an issue during embedding.

Keen's implementation scenario for C-CAP is set out in Appendix A of [the plan](#). This has informed the design of the embedding strategy and ensures our plan for engaging diverse stakeholders is designed to maximum institutional impact.