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Collaboration between Business and Research Organizations: Designing and Evaluating a Web Based Care Plan

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Abstract

Background: Collaboration has been defined as 'the act of working jointly', and challenges include sustainability, time and building effective partnerships. Successful collaboration elements include understanding others' roles, leadership, an appreciation of each other's terminologies, goals and methods. Stakeholders from different worlds such as clinical, political, technical and commercial with different priorities may rely on their leadership abilities to bridge different institutional worlds.

Aim: To explore stakeholder's views and experiences of their involvement in the CDM-Net project.

Methods: Qualitative, using a semi-structured interview schedule.

Findings: The findings suggest that the twelve stakeholders were actively involved and took their responsibilities seriously in order to achieve positive outcomes. In this project the strongest identified tension was because of the differences in stakeholder aims; all expected that the team would develop a service and conduct research according to the project brief, but, opinion varied depending on whether the organizations' focus was business or research oriented. Challenges also arose because of research requirements and commercial imperatives not being clarified, formal arrangements taking longer than anticipated to finalize, individuals not being able to attend meetings, integration and interoperability of systems across multiple partners, no time to follow detail which impacted on managing the project, and the level of effort involved in the change process and the engagement process of the clinical community.

Conclusion: Challenges were resolved through the governance and committee structure, personal dialogue between individuals and strong leadership, suggesting that managing conflict is central to undertaking collaborative activities.

Keywords: Stakeholders; Governance and committee structure; Collaborative activities

Background

The term collaboration has been defined as 'the act of working jointly' [1] and has five underlying concepts; sharing, partnership, power, interdependency and process [2]. Challenges for collaborations include sustainability [3] and time [4]. Building effective partnerships can be difficult and obstacles may be encountered while endeavoring to establish positive working relationships. Generally, problems are not well anticipated, and those with the formal authority may have the power to control key resources [5,6]. While there is evidence that partnerships frequently fail [4,7]. Elements for a successful interdisciplinary collaboration include an understanding of others' roles and interpersonal relationships [1], and leadership skills to ensure financial and non financial resources, partnership efficiency and challenges are appropriately managed [4]. Leadership skills, along with an appreciation of each other's terminologies, goals and methods are all important to overcoming cultural and methodological divisions between disciplines [8].

Thus, stakeholders from different worlds such as clinical, political, technical and commercial, with different priorities may rely on their leadership abilities to bridge these different institutional worlds with their complex interdependencies and inherent tensions [9].

In 2007 the Chronic Disease Management Network (CDM-Net) project was funded and undertaken by a collaboration of twelve Australian and international organisations that was led by an innovative small enterprise, Precedence Health Care (PHC) [10]. The organisations included state and commonwealth government departments, leading research institutes (universities), major global businesses in information and communication technology (ICT) and health care, innovative small and medium enterprises (SMEs), and key health care stakeholders. This complex project included two parts; one was the development of a chronic disease management system (CDMS) for managing chronic disease using electronic care planning to facilitate the use of GPMPs and TCAs and improving the communication between GPs and other health professionals; the second was to evaluate the impact of CDMS.

The project was managed through a committee structure [10] (Figure 1). The Steering Committee oversaw the conduct of the project, reviewed the financial statements and performance against the project plans, agreements and contracts. The CSAC was responsible for providing advice about planning and implementing the clinical components of the project including evaluation and the outcomes of the project. ICTAC was responsible for providing advice about planning

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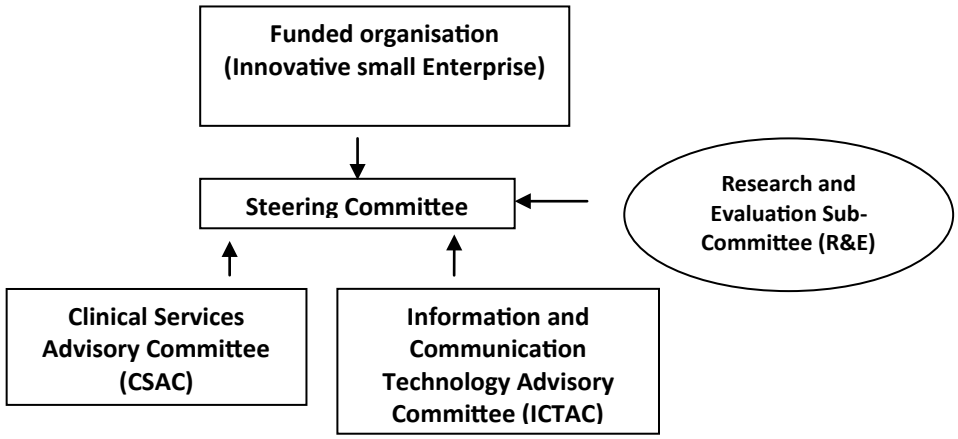

Figure 1: Project management and committee structure for the CDM-Net project.

and implementing information and communication technology (ICT), setting objectives to meet the ICT requirements of the project and overseeing ICT activities. R&E provided advice about the conduct of the research component including study design, obtained ethics approval for the research component, ensured research activities were conducted according to the ethics requirements and monitored the progress of the research [10].

All organizations were represented on the various committees and the twelve senior staff held responsible leadership roles in this project, among other things, they were in the position to facilitate the development of trust between the organizations, oversee fund expenditure and manage challenges [9,11].

The ICT partner's interests were twofold; one, the development of CDMS, and two, marketing CDMS to GPs in Australia and to extend the potential success from the project into the global market. The research partners' focus was to investigate the barriers and facilitators to implementing CDMS into general practice, and to explain the clinical and health economic benefit of using the system.

This paper focuses on the collaborative partnership between eHealth software developers, researchers, key health care stakeholders and public funders.

Methodology

Aim

To explore stakeholder's views and experiences of their involvement in the CDM-Net project.

Methods

A qualitative study using a semi-structured interview schedule.

Data collection

Interviews were conducted between June and October 2009. An invitation to participate was forwarded via email; when leaders indicated their agreement to participate, a date and time was arranged. All agreed to participate and all provided informed consent. The interviews were approximately 10-20 minutes duration; eleven were conducted by telephone and one face-to-face. All were tape recorded and transcribed verbatim. Based on the literature, a semi-structured interview schedule with eight sub-headings was purposively developed for these interviews (Box 1).

Data analysis

Data were analyzed according to the framework method [12], and verified independently by two investigators; when there was a difference of opinion, discussion was held until agreement was reached [13,14]. Findings are reported and discussed under the interview schedule's sub-headings.

Ethics

Ethics approval was obtained the Monash University Standing Committee on Ethics in Research Involving Humans.

Findings

Expectations at the beginning of the project

Everyone's expectation was that the team would develop a service and conduct research according to the project brief [4,8]. … *if we can do that we could make a significant difference to the way in which chronically ill people are managed…*" (P-1) As a 'groundbreaking, innovative system' it was anticipated that education would be needed to "… *get doctors and other health professionals used to it…*" (*P*-3). For those involved in the system development, there was an expectation that there would be a "… *product with a future market, both in Australia and overseas ...*" (*P*-4, *P*-5). Whereas for those involved in the research component,

… if we come out of this project with some understanding of working dynamics between the organisations, establish a framework for collaboration, enroll a modest number of GPs and patients, and get our processes it right, then… my expectations have been filled (*P*-8).

The collaborative relationships in the project

While the majority identified contentious issues, all agreed that the project was large and complex [9]. Most of the issues were resolved through the governance and committee structure or interpersonal relationships [8]. Initially, the interaction to meet the research requirements and commercial imperatives were not clarified properly and tensions arose, particularly when "... the research aspect [was

thought to have] *kind of burdened or slowed down the rate of adoption of CDMS in the field...*" (*P*-3).

To resolve these tensions, one leader spent a full day speaking to relevant stakeholders to understand the relationship between the commercial and research components. This resulted in "… *all of us trying to understand what the others' objectives were ...*" (*P*-7). It was realised that both the research and commercial interests were both important to improving quality services for patients with chronic disease [8,9,15,16].

….*it has been challenging and it forced us to highlight the different expectations around accountability, different perspectives, other parties wanted technology and commercialisation, which was a different perspective from where I was*…(*P*-11).

Perception of outcomes/benefits of the project

The most immediate benefit was to demonstrate an e-Health initiative that works; that a piece of software which takes a range of data input can produce a GPMP and TCA; for getting research evidence around GPMPs and TCAs and collaboration across the care team; and a more coordinated approach for the GPs' management of patient with chronic illnesses [4,8]. For the long term, one of the significant learning's was the level of effort involved in the whole change process and engagement process of the clinic community "… *if it doesn't have a strong business advocacy and support to get over the initial hump, then you are going to be at risk of failure...*" (*P*-10). From the business perspective, some felt benefits could include "…*leverage for some additional business down the track....*" (*P*-5). Others felt "… *the level of clinical push for uptake would be a significant outcome...*" (*P*-10).

Challenges that Arose and Outcome of Addressing these

Formal arrangements such as 'multi-party' contracts and agreements took longer than anticipated to finalize "… *because at a corporate level there wasn't a very good understanding about the collaborative nature of the project from previous discussions ...*" (*P*-6). Not being able to attend meetings and no time to follow detail were seen as a challenge, because this impacted on "… *managing the scope of the project...*" (*P*-5). In addition, securing the necessary resources within particular organizations and "… *agreeing how funding should be managed in a way that provided accountability ...*" (*P*-11) were identified as important challenges that needed resolving [5,9].

There were significant technical challenges around the integration and interoperability of systems across multiple partners, for example, "… *on the adoption side by GPs ...*" (*P*-1), "…*trying to integrate this program into GP's practices ...*" (*P*-7), "… *cost* [regarding system development] ..." (*P*-4) "…*insufficient data from the project for the evaluation process...*" (*P*-3), "… *differentiating between our role in research and our role in supporting a commercial enterprise ...*" (*P*-8),"… with the biggest challenge seen as the "… *adoption of the process by the GPs ...*" (*P*-9) [9].

Nonetheless, challenges were resolved through individuals negotiating with the project director, using the governance and committee structure, and personal dialogue between individuals, particularly for the ongoing promotion of the benefits to the GPs including change in revenue patterns and team care management [5,9].

Opinions of the outcomes

Generally all agreed that the development of CDMS as a tool to assist GPs in patient management, successes included "… *engagement of multiple stakeholders ...*" (*P*-6). Other successes included "… *we had proof of point that the integration style works and has benefits in the short term ...*" (*P*-4), the project achieved "… *a lot in terms of the mechanics of getting something developed and something in the field ...*" (*P*-3,) and the results have shown "… *new ways of doing things including engaging multiple stakeholders ...*" (*P*-6) [17,18].

As would be expected from a large complex multidisciplinary project, challenges were flagged. From the 'product' perspective major challenges were "… *the issues around acceptance and uptake in the wider field, and commercialization ...*" (*P*-5). Poor uptake by the clinical community was mentioned as a concern by most, but it was pointed out that this is a pilot project "… *which has provided valuable learnings regarding process product development and clinical outcomes ...*" (*P*-8). There was also comment about a degree of scepticism about the outcomes; that these outcomes may not be statistically reliable "… *but there are certainly strong indications and worth some further investment around this...*" (*P*-10) such as "… *broadening the General Practice Management Plan (GPMP) for other chronic diseases, in other regions, in super clinics, looking at CDMS to see if it makes chronic disease management more efficient...*" (*P*-12).

Involvement in follow-on projects

All agreed they would be involved with PHC in follow-on projects; all except one agreed they would be involved with the universities, and the reason for that was "…because that is not where our business interests are ..."(P-2). This was validated with all but one agreeing to become involved in a follow-up project; and one wished to be involved, but wasn't able to because of logistic reasons [4,8]. Interest to work with the universities was because of "… their medical knowledge, within the medial sphere, who know some of the nitty gritty …" (P-3) and "…to get a disciplined approach to evaluation; you can actually get something you can publish in a refereed journal and start to say "Here is the clinical relevance of this piece for investment in IT ..." (P-10).

Other Comments

Some reiterated points they felt were important: "… there was an amazing level of trust and support throughout the whole project, which was exceptional ..." (P-1) and this was particularly evident when addressing challenges. For many, this was the first project of this range and complexity they had been involved in thus "… there was a high learning curve ..." (P5). "... It was quite an ambitious project, very positive for a very tough job ... (P-11) because "... any project has both its strengths and weaknesses ..." (P-3). Dealing concurrently with commercial and research imperatives was challenging. The research and commercial interest appeared to be opposing goals that were destined to be in conflict. While the commercial interest may have focused on research and development to enhance product uptake and utilization, the health services research focused on identifying barriers at all levels of implementation. Unless the latter is understood, effective changes cannot be made by software developers in the event of less than adequate utilization.

It was also re-iterated that more meetings may have assisted in the early stages when conflict and confusion emerged, and budget matters may have benefited from being clearer.

Discussion and Conclusion

The findings suggest that the twelve stakeholders involved in this collaboration were actively involved and took their responsibilities seriously [1] in order to achieve positive outcomes when endeavoring to

introduce eHealth initiatives into general practice. All were supportive of the collaboration, and the majority attended meetings where challenges, plans and possible solutions were discussed [2-4]. Not unexpectedly, the opinions and anticipated outcomes varied depending on whether the organization's focus was business or research oriented, but were not so disconnected that the impact on working relationships and project outcomes was primarily negative [5,6].

Process challenges, such a legal agreements, attending meetings and dealing with budgets, were experienced by both groups and provided 'common ground' from which understanding [9], trust and patience developed as part of the working relationship. The issue of recruiting GPs into research was described as one of the major challenges, but was not unexpected by those who have been involved in research with GPs [8]. Thus, given the nature of general practice and the inherent difficulties of change management in this setting, the stakeholders and team members celebrated the modest outcomes obtained within a tight budget [9].

The results suggest that managing conflict is central to undertaking collaborative activities. In this project the strongest identified tension was because of the differences in stakeholder aims, such as the business organizations' aims compared to the researchers' aims [9]. In collaborations, stakeholders will usually rely on the governance and committees with representatives from the relevant organizations to resolve the conflict and while this may be a challenge, to ensure the sustainability of business-research partnerships, leaders of collaborations would benefit from developing conflict resolution skills [5,6].

Although the outcomes from this project may not be generalizable to other projects undertaken between business and research oriented organizations due to the limitation of the small number of leaders involved in the project, conflict resolution would most likely feature in all forms of collaborative partnerships, thus policy makers, business and research oriented organizations should consider the value of ensuring their leaders have the relevant skills to manage any conflict that may arise. Future research should aim providing some understanding of the nature of conflict that could arise in these particular collaborations, and identify the positive effects of conflict on the development, implementation and evaluation of such projects.

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