DISRUPTING FACULTY SERVICE: USING TECHNOLOGY TO INCREASE ACADEMIC SERVICE PRODUCTIVITY

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Scholarly attention regarding faculty involvement has primarily focused on faculty opinions of shared governance and faculty influence on institutional decision-making. There has been limited attention given to academic service productivity and the effectiveness of traditional approaches toward the accomplishment of faculty service requirements. This paper discusses disruptive technological change as a subset of disruptive innovation and proposes a technology-based framework for increasing service productivity while maintaining effort with regard to faculty service requirements in academic institutions. Specifically, a social networking tool is used to approach academic service projects with organic involvement and measured progress. It is suggested that such an approach may have positive implications toward increasing productivity in academic service. Further, additional benefits inherent in the tool make possible the leveraging of external networks for further productivity gains with no increase in resources while fostering a standardization of products across universities.

K***eywords:*** *faculty service, disruptive innovation, disruptive technology, networking*

Higher education institutions worldwide are increasingly confronting mounting complexity and rapid change, driven to a large extent by the introduction and proliferation of new information and computer technologies. The confluence of several forces, including the globalization of higher education, intense market competition, financial pressures, and societal expectations of greater accountability, is disrupting U.S. higher education and challenging faculty to work more effectively and productively. New technologies are a key ingredient in this process, and their influence on academic work is increasingly pervasive. The impact of technological change on the way faculty members work is most evident in the teaching (Kim, Mims, & Holmes, 2006) and research roles (Cummings & Kiesler, 2005) of faculty members. There is less evidence about the implications and impact of technological change on the service role of faculty members, though there is a clear recognition of the need for more effective academic service in today's rapidly changing environment (Duderstadt, 2000; Leach, 2008).

In our faster-moving world, the hierarchical structures and organizational processes used for decades to run and improve enterprises are no longer up to the task. Existing structures and processes that together form an organization's operating system are hard pressed to address the challenges produced by constant turbulence and disruption (Kotter, 2012). This paper proposes the use of a technology-based framework that utilizes a network-like structure and a very different set of processes in the realm of academic service. This framework positions higher education institutions to respond with greater agility, speed, and creativity in the 21st century.

Van Vught and Westerheijdon (1994) highlight two historical models of quality assessment in higher education: the French model of submission to an authority, or the accountability model, and the English model of "a self-governing community of fellows," or the peer-review model. While both of these models are well integrated in today's higher education institutions, they tend to lead to contention and distrust when they encroach upon each other's turf. This

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conflict of models may be better known as "faculty versus administration" (Lewis & Altbach, 1996). It is in this context that faculty engagement through a committee system seeks to ease tensions by overlapping the two models. In an early description and rationale for the faculty committee system, Jamison (1948) argues,

> All of this organizational machinery designed to give the faculty participation in administration is of unquestioned advantage to both teachers and administration. It enables the administration to profit from the ideas of specialists on the faculty, and it gives teachers an insight into the problems of administration. It brings to the fore teachers who have potential administrative ability, and marks them as prospects for administrative positions. Above all it contributes much to maintaining high morale. (p. 86)

The faculty governance structure through committees with ex officio administration status that is now standard among U.S. universities has been codified for more than four decades (Jones, 2011). This structure provides the third dimension of a faculty member's tripartite responsibility, namely, teaching, research, and service. Service primarily represents membership on various committees. While faculty participation still remains vital to institutional health, the structure of the traditional committee system has become outdated and inefficient.

As institutions of higher education have become increasingly complex organizations, the issue of institutional governance has become a point of major contention on many campuses (Gerber, 2001; Simplicio, 2006). This paper takes advantage of advances in information and communication technologies (ICT) to present a modified model of the typical higher education faculty committee system that both increases the benefits of faculty participation and idea generation, and overcomes the problems and inefficiencies of the existing model.

BASIS OF AND PROBLEMS WITH THE TRADITIONAL COMMITTEE SYSTEM

The proposals presented in this paper suggest a paradigm shift at two stakeholder levels: the organization (university) and across organizations (universities and/or outside agencies). When such a shift challenges existing business models and/or established networks, substantial justification and support are necessary, especially when social or cultural values are at stake (Hwang & Christensen, 2008).

The traditional faculty committee system is based primarily on representation and participation. First, each stakeholder, college or department, sends a representative to the committee to gather information and advocate for its position. The faculty representative primarily serves not as an independent agent or free thinker, but as a promoter of the principles and interests of others, even if they are the interests of the member's own department. A representative's role, by nature, is that of a constrained agent and a limited thinker. (This does not mean that all representatives act in this manner, but that the nature of a representative is to represent or advocate on behalf of others). One, if not the main reason for a representative committee system, is a lack of information. Previously, information sharing and communication was a cost-intensive task as it was only available through either verbal communication requiring physical presence or written communication on physical documents requiring time-intensive dissemination and delivery. Given advances in information and communication technology, the cost of information sharing has plummeted to nearly zero, thereby lessening the need for a committee system based on representation.

A second basis for the committee system builds on the first: the service credit. As mentioned, service is the third leg for faculty responsibility and plays an important role in promotion, tenure, and merit-pay systems. Under the traditional committee system, service credit is based on participation (due to the need for representatives) in formal committee membership and attendance at committee meetings. Thus, the traditional service credit is not based directly on productivity of the committee or the quality of the committee's output. In other words, faculty's service responsibility is based inherently on non-productive credits. It's what you are doing, not what you have done.

This paper proposes an alternative framework for committee work with regard to projects and policies. Traditional committees may still be effective for certain tasks such as formal, recurring or cyclical tasks, as in promotion and tenure decisions or faculty and student awards, but the foundations of the traditional committee system lead to inefficiencies of which this paper will address four discussed in detail below.

#1—The Anti-Blacklist

Committee work is a type of pubic good, as few members bear the cost of designing new programs or policies that

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benefit all faculty members. Therefore, the free-rider problem comes into play as faculty members wait for each other to volunteer and bear the cost, while those who hold back still receive the benefit. This is somewhat mitigated by tenure-promotion requirements for junior faculty and merit-pay systems for senior faculty. However, with state cuts to higher education and pay freezes, the merit-pay system has faded, and many committees are populated by younger, inexperienced faculty. As an illustration, at one point in our institution, we had to resort to "spontaneous nominations" in faculty-wide meetings to fill vacant and new positions. After adopting a policy to limit this process, it was often the case that the department chair could be seen wandering the hall to "persuade" a faculty member to accept a committee assignment, which often fell on unsuspecting junior faculty. This "persuasion" was reinforced by senior faculty stating that "it will look good" on reappointment and tenure packets. This seeping of non-tenured faculty onto committees permeated to university committees, as well, including faculty senate. This permutation of inexperience and limited institutional knowledge on college and university committees is a foundation for uniformed decisions and inefficient outcomes. It is also likely to shift the relative balance of influence from faculty members toward administration as untenured faculty lack the "protection" of tenure when conflicts arise with administration.

#2—The Idling Lemon

Another potential inefficiency is low-quality committee output as the service credit is gained through participating in committee membership, not directly on output quality. Committees are charge-based, receiving charges from either administrators, such as a dean, or peer committees, such as faculty senate. However, committee participation requirements are duration-based, such as a one- or two-year appointment in which the representative receives credit for participating in various meetings during the specified duration. When the term expires, all responsibility for that faculty member ends no matter what was or was not accomplished. This can lead to the "grin-and-bear-it" strategy when committees are charged, or "lame duck" members may simply stall on the charge, leading to the charge being carried over to the next cycle or the committee simply submitting inferior work just to complete the charge. An example of this in our institution was in relation to the development and adoption of a formal assessment structure as committee after committee stalled on the task. This inefficiency was a key factor in delaying extension of accreditation from AACSB, our accrediting body.

#3—The Fumbling Baton

Another problem of the current committee structure is inefficient committee transitions. Change in committee membership often leads to discontinuity of thought and task. Recommendations from previous committees are overlooked and/or not implemented. This often leads to duplication of previous work or a "dropping-of-the-ball" on projects altogether. An example from our institution is our recent SWOT (strengths, weaknesses, opportunities, threats) analysis. This analysis was organized and performed with initial analysis conducted by members of the Strategic Planning Committee. However, half of the committee members' terms ended and these were replaced. Additionally, a faculty member was replaced due to a job change. This left the committee with only twenty five percent of the original faculty members who had conducted and begun analysis of the data. Analysis of the project stalled, and the committee moved onto more current charges.

#4—The He Said, She Said, We Don't Critique

Teamwork and effective team-building is gaining importance in curricula as employers are seeking students with teamwork skills, but designed team-building is not determining current committee membership due to the representation framework. Faculty is becoming guilty of the "do-as-I-say-not-as-I-do" critique. There is a growing inconsistency of organizational structure between the "real-world" and academics leading to efficiency gains not being realized. Committee effectiveness can be limited by committee composition as skills sets may not exist or match and personality and personal histories may collide.

Given the inefficiencies found in the traditional faculty committee structure, an alternative committee structure needs to be created that eliminates or reduces these inefficiencies. A faculty committee structured, if it is to be efficient, must move away from the traditional foundations of representation and participation, and should be founded on tested team-building techniques and service credits earned through production, implementation, and quality.

THEORETICAL ALTERNATIVES TO THE TRADITIONAL COMMITTEE STRUCTURE

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Starting from a broad and traditional perspective, strategic goals are first formulated from an organization's created vision/mission statements. In our illustration, we use a college within a higher education institution as the organizational unit. The administrator (dean) charges a standing faculty committee that serves in an advisory position to pursue projects or policies to achieve the unit's strategic goals. These charges are then delegated by the committee chair to individuals (including the chair), or a larger project is broken up and delegated to individuals for completion. The following will propose two theoretical alternatives to this standard format, then follow this discussion with a practical framework to accomplish them.

Traditional and Alternatives to Academic Committee Structure and Process					
	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
Traditional	College Vision/Mission	Derived Strategic Goals	Dean charges a committee	Committee delegates activities	Individual participates in activities
Proposed Alternative A	College Vision/Mission	Derived Strategic Goals	Dean selects or faculty member volunteers to lead specific charge	Individual forms a committee and manages action until complete	
Proposed Alternative B	College Vision/Mission	Derived Strategic Goals	Individual proposes mission aligned project	Dean approves project	Individual forms a committee and manages action until complete

Figure 1. Committee structure and process

In the two alternatives, the first two steps are identical: the strategic goals are derived from the College's created mission/vision statements. In Alternative A, the Dean then charges an individual with a project or an individual faculty member chooses a charge from a designated list of charges provided by the Dean. The individual then forms a committee that exists until the charge is completed to satisfaction. In alternative B, an individual faculty member proposes a project related to the College's Mission and Strategic Goals to the Dean for approval. If approval is given, the individual receives a charge from the Dean and then forms a committee that exists until the charge is fully complete. Both of these alternative structures rely on contemporary innovative practices within high-performing organizations: self-forming groups or individual-led team-building (as opposed to representation) and production or completion and implementation of the charge (as opposed to participation).

INFORMATION COMMUNICATION TECHNOLOGIES AND DISRUPTIVE INNOVATION

Information Technology has an established history playing the role of "enabler" for various forms of organizational change ranging from modified business processes to organizational transformation (e.g. Faisst, 1997; Gillenson, et al., 1999; Henderson & Venkatraman, 1993; Mitra, 2005; Tung & Turban, 1996). When technologies intercede such that they "disrupt an established trajectory of performance improvement, or redefine what performance means," these events have been coined "disruptive technological change" (Christensen & Bower, 1996). While the initial inception of this type of paradigm shift was centered around technology, it has since been adapted to a broader range of advancement in products and business models and taken the more encompassing name of "disruptive innovation" (Markides, 2006). In this paper, we use both terms interchangeably, though our focus is on the use of technology as an enabler of disruptive change.

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Since ownership of the Internet changed hands from a governmental agency to the public, computing usage and application has been evolving to become more ubiquitous and involving (Lyytinen & Rose, 2003). The relatively recent, explosive growth of social networking tools like Facebook and Twitter provide ample evidence of the reach of computing technology beyond the domain of application developers and "computer geeks." While initially seen as social tools, beyond the scope of the workplace, many organizations have learned the value of incorporating such tools into their business processes (e.g. Mangold & Faulds, 2009; Veil & Buehner, 2011). Although incorporating stakeholders outside of the organization has not been uncommon, it has been challenging. Currently, advances in information technology have minimized barriers to interaction with such stakeholders to the point that their involvement may look as if it mimics that of members within the organization (Harrison & St. John, 1996).

In the following sections we propose a framework that recognizes technology as an enabler of process modification and outcomes within the context of academic service. This framework seeks to take advantage of the ubiquity, involvement, and minimal barriers presented by evolving internet computing platforms. Further, we approach implementation as a form of disruptive innovation.

A PRACTICAL FRAMEWORK: THE G.A.N.D.A.L.F.E. SYSTEM

While there are many frameworks that can implement one of the above alternative frameworks, this section will describe a specific practical approach based on Alternative A and then adapt it to Alternative B in Figure 1. This approach is called the G.A.N.D.A.L.F. E. System or the "Goal Achievement Network for the Diversity of Alignment to Leverage Faculty Expertise." The GANDALFE System consists of self-forming groups centered on a specific goal that take a relevant project through to completion/implementation. This system utilizes advances in information and computer technology (ICT) that allow for self-forming groups, namely enterprise social networks and online collaboration tools. While there are several of these networks available, for example, MangoApps, Chatter and Jive, our example will use Yammer. Yammer is self-described as follows.

> Yammer is a secure, private social network for your company. Yammer empowers employees to be more productive and successful by enabling them to collaborate easily, make smarter decisions faster, and self-organize into teams to take on any business challenge. It is a new way of working that naturally drives business alignment and agility, reduces cycle times, engages employees and improves relationships. (www.yammer.com)

Yammer (and its substitutes) allows users to create groups and to keep track of conversations. These groups can be set up to allow anyone in the organization to join and review the ongoing conversation in a particular group. This open access eliminates the need to build groups through representation due to limited information as any and all faculty members can, at any time, peer into one of these groups, read the previous conversations about an idea or project, evaluate the current proposal of the group and offer suggestions or raise concerns directly. The elimination of representation through technology allows for committees to be constructed by other criteria such as individual-led team-building techniques. The following flowchart and descriptive steps illustrate the GANDALFE System based on Alternative A.

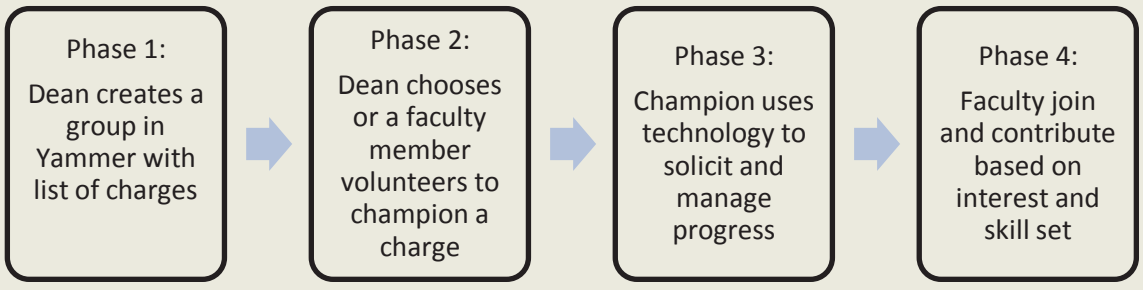

Figure 2. GANDALFE process flow

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Phase 1

The Dean creates a group in Yammer and posts a list of charges derived from the mission and strategic goals that would have traditionally gone out to standing committees. This list of charges can come out at regular intervals, such as the start of a semester, or it can be updated as new charges are formulated. Each faculty member can view this list of charges at anytime.

Phase 2

The Dean designates or an individual faculty member then takes claim to a charge signaling to be the charge champion in a post in the Dean's Yammer group. This claim is automatically recorded in Yammer.

Phase 3

Once the claim is recognized and approved by the Dean, the faculty champion then creates another open Yammer group around the specific charge. The faculty champion then uses individual-led team-building approaches to construct a committee by inviting other faculty members to complete the charge. The committee utilizes Yammer to communicate, both informally throughout the process about ideas and times for open meetings of the committee, and to more formal communiques, such as postings of updates of the current iteration of the project. These records of activity replace the outdated keeping of minutes in meetings.

Phase 4

All faculty members and administrators may keep track of the committee progress and offer suggestions or concerns directly by posting in the committee's Yammer group. Yammer records these idea and objections. The committee continues to remain intact until the charge is completed or the project is implemented. Service credit is given by the Dean when the charge is deemed successfully completed.

The GANDALFE System can also incorporate Alternative B. To do so, an individual faculty member can post a proposal of a project in the Dean's Yammer group for approval by the Dean. If approval is given, Phases 3 and 4 are followed.

THE MOTIVATION: THE STICK AND THE CARROT

The next issue is to provide motivation for faculty to champion a project from the Dean's list or to create a proposal. There are two options for those who are not intrinsically motivated: the stick and the carrot.

The Stick

One way to provide extrinsic motivation is thorough the use of a stick by adding costs to faculty members if a certain behavior is not adopted. Options A, B, and C use a stick.

Option A. Each faculty member is expected to champion one approved project on a rolling two-year basis to earn service credit and meet the service requirement. Of course, the number of projects and years can be adjusted as needed. This is a simple option with weaknesses such as no service credit for a team not completing a charge.

Option B. Each faculty member is expected to champion one charge or assist on two charges on a rolling basis. When the charge is complete, the Faulty Champion (or the Dean) can award assistance service credits. Along with problems such as nepotism among faculty, the above two options do not deal with a potential problem—the "unwanted" charge.

Option C. Each faculty member is expected to have a set amount of service points every year. The Dean awards points for charges. The amount of points per charge is set by the Dean. If there are no takers, the Dean can increase the points on specific charges. The Dean can also adjust the points to set priorities of charges. A benefit to faulty is that service points can be accumulated and applied over multiple years, so a faculty member could invest heavily in service one year to leave room in the following years to concentrate on research and/or teaching.

The Carrot

Another way to provide extrinsic motivation is thorough the use of a carrot by adding benefits to faculty members if

a behavior is adopted. Options D and E combine the use of a carrot.

Option D. A way to incorporate benefits is to modify Option C, but allow service points to be bought and sold among the faculty. This can allow for specialization among faculty, in which the faculty who enjoy service can focus on service projects and sell points to faculty who would rather not do service and focus on research and/or teaching. A market for service credits could be created in which the credits could be supplied and purchased anonymously at current market price through a third party to reduce power issues among faculty.

Option E. Another way to add benefits would be to include with Option C a reward system for accumulated points in which the faculty may "spend" their points on selected benefits. These benefits could include choosing their own schedule, "renting" a designated parking spot, hiring research or teaching assistants, or "buying" out courses.

THE EXTERNAL NETWORK VIEW

The proposed two theoretical alternatives and the practical GANDALFE framework described above implicitly assume an internal service structure in which faculty members from a specific institution only receive service credit by completing/implementing projects and policies for their specific institution. This internal service structure may also be outdated and inefficient. First, the smaller the institution, the smaller the number of faculty, and the fewer total projects/polices that can be accomplished; however, it may be the case that less is simply needed for smaller institutions. A stronger argument for the inefficiency of the internal service model comes from economic theory, namely labor matching and knowledge spillovers.

First, successful team-building requires that members have complementary skill sets or that better skill-matching to specific projects/polices leads to more successful teams. The larger the faculty pool, the more skill and knowledge sets are available, making it more likely the team will produce a high quality project or policy. This is the essence of the labor matching model developed in Helsley and Strange (1990). The opposite, of course, is also true. The smaller the pool to choose from, the less likely a team will produce quality results. Second, as different knowledge sets interact, there is a sharing of information and ideas, termed knowledge spillovers, leading to productivity gains (Marshall 1920). These knowledge spillovers increase with the size of the pool, as Audretsch and Feldman (2004) show that the bulk of new product innovations in the form of patents come from large cities. Thus, the larger the pool of faculty the more knowledge spillovers occur increasing committee quality and efficiency.

These knowledge spillovers need not be immediate on a specific project/policy, but can surface over time. For example, a faculty member from one institution serves on a pilot project that is implemented at another institution. If that pilot is successful and the project is implemented on a large scale, the faculty member working on that project from a different institution can use knowledge gained to implement that project at her home institution. So the question arises: How can an institution best take advantage of the efficiency gains from a larger pool of faculty without directly spending the resources on hiring more faculty members? The answer is Inter-institutional Service Networks (ISNs). Advances in ICT have not only reduced the cost of information sharing internally to the institution, but across institutions. This cost reduction has brought networks to the forefront of modern business (see Kothandaraman & Wilson 2001) and therefore should be incorporated into a modified academic service system.

Before turning to some practical structures of ISNs, an argument must be made for faculty members at a specific institution receiving service credit at their institution for work on a project or policy that directly benefits another institution. The argument is twofold. First, the service credit granting institution should benefit from some level of reciprocity within the ISN thus benefiting from a larger pool as argued above. This system operates similar to a faculty exchange program only what is being exchanged is service not teaching, and digital, not physical (though this second particular aspect need not only be digital).

Second, while a faculty exchange program requires current "equal" exchanges to ensure current "equal" value to the agreeing institutions, participation in an ISN need not require such restrictive conditions due to the creation of network externalities. Katz and Shapiro (1986) developed a formal model articulating the effects of consumption or network externalities. Using the telephone (a communication technology) as an example, they argue that the benefits of purchasing a telephone increase the more other consumers purchase telephones and join the telephone network. As a result, the value of a network increases when more engagement in that network exists. Thus, even if

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current reciprocity does not occur to the service-granting institution, the institution still receives a benefit as the value of its ISN increases through faculty engagement in that network. Just as with the telephone, the institution may not be a current heavy user of the network, but it still benefits from having access to possible future engagement.

Turning to the practical structures of an ISN, there are essentially two options, a vertical network with a geographic constraint and a horizontal network without a geographic constraint. The first option envisions an ISN on the basis of geographic considerations. This network may form within a state—for example, including all public institutions within a state—or it may form within a region. The logic of this type of ISN is that institutions within a geographic area may face some of the same issues, such as political regulations and budget issues. This type of network, however, faces the challenge of trying to incorporate different types of institutions; for example, a large research institution with an international market and a small teaching institution with a regional market. Another option for an ISN is a horizontal network without geographic constraints. In this case, individual institutions seek out peer institutions that have certain characteristics in common, such as a teaching focus versus a research focus, or a similar size student body. Also, nothing inhibits an institution from being a part of multiple ISNs.

The practical aspects of implementing an ISN can still follow the basic GANDALFE model described above. A simple implementation technique could be that the list of charges from a participating institution could be viewed by all faculty of each participating institution. Of course some practical limitations could be adopted, such as the faculty champion of a charge must be from institution where the charge originated or the institution could display a public list (available to the network) and a private list (available only to the institution). Other limitations may be needed that are not addressed here due to the scope of this paper.

ADVANTAGES OF COLLABORATIVE NETWORKS

The collaborative information system structure discussed in the GANDALFE approach carries with it some advantages that are inherent in all collaborative information systems. It is relevant to point these out since the choice of technology may play a role in enabling certain behaviors which contribute to the success of an implementation.

Substantial evidence has been gathered which supports the use of collaborative systems, also called Group Support Systems (GSS), within an organizational structure and across structures. In both environments, research and practice have verified that, in the majority of cases, the use of collaborative systems has increased performance (Nunamaker, Jr., et al., 1997). Specifically, idea generation has been shown to improve in quantity, satisfaction and perceived effectiveness (Connolly, et al., 1990; Gallupe, et al. 1994). Simply the capacity to share and make decisions has been shown to improve due to the removal of geographic barriers and inherent personality conflict which may be present in face to face exchanges (Dennis, 1996; Valachich, et al., 1994).

As mentioned in the GANDALFE system, external networks may be utilized to gain productivity enhancements and additional value from external resources. Longitudinal studies support the creation of 'social capital' when collaborative systems are used (Bhandar, et al., 2007). In these scenarios, the utilization of resources outside of normal inherent networks (i.e. networks isolated within the organization) can lead to the development of broader networks linked by a social component (i.e. the social interactions facilitated by technology) which may be relied upon over time.

The GANDALFE system proposes an alternate approach to academic service with the intention of increasing productivity and effectiveness. We highlighted inherent benefits in this section to show that the goals of GANDALFE align well with extant research and case analyses regarding the use of collaborative information systems.

CONCLUDING REMARKS

The intention of this paper has been to offer an alternative framework for enhancing productivity and employee satisfaction while accomplishing tasks related to academic service. The GANDALFE approach suggests a reliance on information technology to eliminate barriers to communication that come with the traditional approach (e.g., setting up meeting times, facilitating participation, clarifying purpose). Combining information technology as an enabler and motivator yields an approach with multiple facets, each reflecting potential for increased productivity, higher satisfaction, and increased overall gains not only for an individual university, but also for all participating institutions.

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While focusing on motivators inspires creativity and productivity from the participant's perspective, the management of goals is important as well. The role of a Dean or other administrative agent is critical in aligning the goals of the university with participation among collaborators. Further, where intrinsic motivations are not sufficient, a system using this approach must provide sufficient direction which makes clear the expectations of participation amongst faculty members such that other benefits of collaborative technologies may be enough to carry tasks to completion.

Finally, Yammer was used as a tool for explanation in this paper since it is being used at the university where this framework was developed. This, by no means, suggests Yammer is an exclusive tool for such a practice. Social networking and purpose built collaborative systems are plentiful and easily accessible over the web. The needs of the participating organizations would determine the requirements for system adoption or creation.

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