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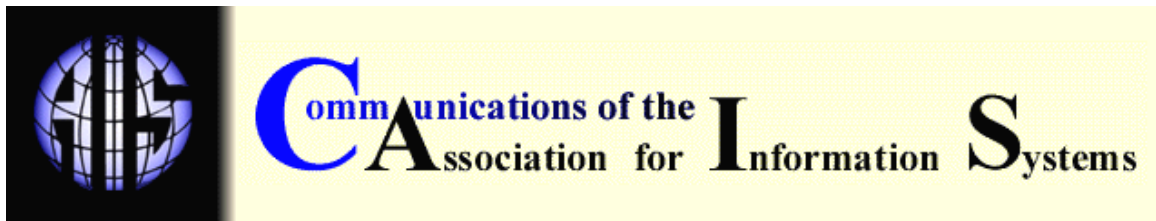
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INNOVATION IN INFORMATION SYSTEMS EDUCATION I: ACCELERATED SYSTEMS ANALYSIS AND DESIGN WITH APPRECIATIVE INQUIRY- AN ACTION LEARNING APPROACH

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ABSTRACT

One of the challenges in teaching information systems analysis and design is setting up experiential learning projects in which students can apply and reinforce the theories and techniques they acquired in the classroom. This article aims to shed light on this issue and offers Appreciative Inquiry as an alternative to the prevailing problem solving lens. The *Accelerated Systems Analysis and Design with Appreciative Inquiry Workshop* revolves around a genuine system design project, which provides an opportunity to apply the latest systems analysis and design methodologies in a realistic setting and to gain hands-on experience in a safe learning environment. Building on the principles of Appreciative Inquiry, the workshop is designed to emphasize collaborative work in the pursuit of both organizational and personal value. The workshop provides not only a framework for looking at organizations and organizational life, but also a language to communicate their dynamic complexities and interdependencies. Overall, participants gain a balanced mix of formal theory, critical thinking, and hands on experience, which prepare them for effective communication and participation in system development in organizational settings.

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Keywords: appreciative inquiry, rapid design, systems analysis and design, action learning

I. INTRODUCTION

One of the challenges in teaching information systems analysis and design is setting up experiential learning projects in which students can apply and reinforce the theories and techniques they acquired in the classroom. A good project gets students involved with actual systems analysis and design, allows experimenting with different interpretations of the theory, encourages collaboration with other students and stakeholders, and provides a venue for sharing the design artifacts. This article describes a workshop that is designed to address the underlying

issue as a module in an information systems analysis and design course offered to students in management schools.

The Accelerated Systems Analysis and Design with Appreciative Inquiry Workshop provides students an opportunity to learn and practice accelerated requirements specification and collaborative system design with an organizational client in a real world setting. The module combines accelerated (or rapid) application development techniques with Appreciative Inquiry methodology. It also draws on collaborative participatory design, systems thinking, project management, scenario planning, and action learning. Whereas the workshop is designed to provide students with firsthand experience of system analysis and design in a safe class environment, it also aims to provide the client with a valuable custom-built information system design blueprint.

In addition to learning the basics of project management and systems analysis and design, the participants gain valuable experience in collaborative requirement specification and application development in the pursuit of both organizational and personal value. Furthermore, they also gain a particular appreciation for the dynamic complexities and interdependencies that derived from the inherited diversity of perceptions and plurality of opinions in the organizational milieu.

In its current configuration, the module is delivered as a two-part workshop, which is the pivotal highpoint of a semester-long introductory course focusing on information systems design and project management in the context of organizations. The course covers theories and basic principles of systems analysis and design as well as project management in the context of information systems in organizational settings. The underlying workshop on Accelerated System Analysis and Design with Appreciative Inquiry is designed to provide students with an opportunity to apply the concepts and techniques learned in a real world setting. Nonetheless, with minor adaptations, this workshop may be facilitated independently of any other curriculum, provided that the participants already understand the fundamental concepts of systems analysis and design.

The workshop has been conducted successfully for four consecutive years in the Weatherhead School of Management at Case Western Reserve University. It was administered to both undergraduate and MBA students in conjunction with their systems analysis and design course. Work experience, which is more prevalent among graduate students, contributes to better understanding of organizational environments; however, it is not necessary for successful participation in the workshop. Both students and external clients or project sponsors expressed enthusiasm and satisfaction from the workshop and its outcomes. No comparative study has yet been conducted to assess the merits of an appreciative inquiry workshop vis-à-vis a traditional system design workshop.

The workshop prescribes a collaborative process of accelerated systems analysis and design. The substantive subject of design, of course, changes according to the particular external client that sponsors the joint project. In the course of the four workshops, students, in collaboration with the respective clients, designed prototypes of a system to support the activities and recent structural changes of the Center for Regional Economic Issues (CREI); a web-based system to support the activities of the career development center office in the Mandel School of Applied Social Sciences and the Center for Nonprofit Organizations; a prototype of an advanced portal system for the CWRU community; and an online interview processing system for the Business as an Agent of World Benefit initiative.

The workshop involves two meetings that include both the participants (in the role of system analysts and designers) and representatives of the client organization. The two-part design is an artifact of the academic context. In principle, the workshop can be conducted in different configurations depending on complexity of project, expected deliverables, and availability of participants.

The next section provides a brief theoretical background about collaborative design and appreciative inquiry. The following part outlines the workshop sequence, describes the process

and deliverables, and provides assessment criteria. Finally, the appendices exhibit a sample of a class handout with workshop description, a facilitator dashboard with workshop agenda, and a participant guide that outlines a typical process.

II. THEORETICAL BACKGROUND

The workshop draws on principles of collaborative participatory design [Gottesdiener, 2002], rapid development [McConnell, 1996], and appreciative inquiry [Cooperrider and Whitney, 2000]. The following section provides a brief theoretical background on these areas with special emphasis on the appreciative inquiry methodology.

COLLABORATIVE PARTICIPATORY DESIGN AND RAPID DEVELOPMENT

Rapid application development refers to an accelerated and concentrated effort using a predefined process to carry out a set of integrated tasks related to system design or application development in a particular organizational setting. Collaborative rapid application development refers specifically to the inclusive participation of representatives of all related stakeholders in the design effort. A central tenet of collaborative participatory design is the direct involvement of people in the co-design of the systems they use. The success of today's organizations increasingly depends on their ability to create a collaborative environment in which actors may celebrate their differences and work with others in building a shared understanding of the systems from which both problems and solutions emerge.

Human organizations and most forms of collaboration stem from the realization that we cannot attain our goals by acting alone. However, while some collaborations excel, leading to sustainable excellence or transformational change, others fall prey to conflict, shortsighted action, lack of shared vision, and inability to reach common grounds. What should be done to pursue joint efforts that thrive and avoid those that fail to fulfill their promise? Collaborative design contributes much insight into this question and helps in forging and sustaining successful collaborations, even in challenging circumstances.

Effective collaborative action requires highly tuned interpersonal skills, profound levels of self-awareness, a fundamental voluntaristic approach to organizational actors, respect for the potential of every human being, and an overall optimistic spirit. Collaborative rapid application development offers a provocative way to explore in small and large-group settings the organization's sub-cultures, business processes, and information systems from multiple perspectives, while catalyzing transformative change.

In the prevalent knowledge-based economy, it is the collaborative efforts of people who jointly build and maintain systems in the service of their organizations that often lead to radical innovation and breakthrough results.

APPRECIATIVE INQUIRY

Appreciative inquiry is an affirmative form of inquiry that both challenges and complements the problem-oriented view inherent in current information systems research and practice. In contrast to most information systems methodologies, which typically focus on breakdowns or snags in order to identify their causes and to learn how to avoid further mishaps, *appreciative inquiry* is an attempt to learn what is conducive to success.

Appreciative inquiry is grounded in Cooperrider and Srivastva's [1987] work, which is currently gaining favor in organizational development circles. It is part of a larger paradigm that explicitly defines itself as theoretically counter to the problem solving approach and as focused on a positive way of knowing. Appreciative studies aim to examine and enhance positive human dynamics, positive forms of organizing, positive relationships, and positive modalities of change [e.g., Seligman and Csikszentmihalyi, 2000].

One way to explain what appreciative inquiry *is* would be to say what it *is not*. In this case, juxtaposing appreciative inquiry against the problem solving approach as its counter image may help to solidify our understanding about the nature of the former¹. Thus—

- The *problem solving* approach starts with a puzzle, a problem, a felt need, or an opportunity that is often defined as a “problem to be solved.” Regardless of the specifics, this objective is used to identify the “problem space,” a set of constraints and boundaries. Grounded in the problem-space and bounded by its limitations, we seek alternative solutions, of which we should pick the optimal one.
- In *appreciative inquiry*, the process starts with appreciation of what works best (in human systems there is always something that does work and can be appreciated). The initial outlook is reflective and explicitly affirmative. Grounded in our aptitudes and lifted with positive affect, we search for an array of ideal possibilities, of which we pick that which is most desired.

Appreciative inquiry implies and drives a unique approach to organizational systems and is often used to drive organizational change. Table 1 provides an overview of its characteristics, which taken together make it a unique approach in comparison to prevalent research in information systems.

Table 1. Distinct Features of Appreciative Inquiry

| | Appreciative Inquiry | Prevalent IS Research ² |
|---------------------------|-----------------------|--|
| Orientation | Appreciative thinking | Deficit thinking |
| Method Archetype | Generative inquiry | Problem solving |
| Drive | Gap opening | Gap closing |
| Focus | What is best | What is wrong |
| Tactical Objective | Enable success | Meet objectives, prevent failure, fix problems |
| Actors | Whole systems | Varied, usually isolated entities |
| Guiding Paradigm | Voluntaristic | Mostly deterministic |

The initial insight to apply appreciative inquiry stemmed from the straightforward observation that, although we generally aim in our research to enhance or improve information systems, we focus much of our inquiry on their problems, failures, and other features that can be fixed, improved or eliminated. Examining and analyzing what went wrong in information systems in order to learn how to make them successful is very popular, but as suggested by the evidence from the field, not very effective [e.g., The Standish Group, 2001]. One explanation of the relentless study of problems and fixes may be the explicit or implicit assumption, that success and failure are binary oppositions, and that an information system will be successful if all the possible pitfalls are circumvented. I posit that “success” is not necessarily the logical opposite of “failure.” Of course, the two are related, but examining one does not guarantee to teach us what we would like to know about the other. In other words, the study of what went wrong may serve those who aim to

¹ I must note here, that this dichotomous description is only to delineate a contour around appreciative inquiry. It is not to imply or create an impression of “good” versus “bad,” or to imply or create an impression of “good” versus “bad,” or to suggest that “problem solving” is a *problem* and appreciative inquiry is the *solution*. Notwithstanding my affinity for appreciative inquiry, I recognize the contribution and merit of the problem solving approach in many instances.

² “Prevalent IS Research” is portrayed here in a stereotypical fashion. The purpose of this juxtaposition is to delineate the characteristics of appreciative inquiry in our context. It is not meant to paint ALL other research in one color, but rather to draw bold lines around a bulk of the overall.

suggest that “problem solving” is a *problem* and appreciative inquiry is the *solution*. Notwithstanding my affinity for appreciative inquiry, I recognize the contribution and merit of the problem solving approach in many instances. avoid failure, but constitutes poor foundations for those who strive to be the best³. With appreciative inquiry, one chooses to explore what actually leads to successful information systems rather than to prescribe failure prevention tactics.

As a constructionist and participatory act, appreciative inquiry thrives on affirmative relationships among those who embrace it and their affirmative topic choice. This is a crucial nonnegotiable entry point to the process. Appreciative inquiry cannot begin and cannot make headway without goodwill, a direction of inquiry, and positive affect.

In its most generic and popular operationalization, appreciative inquiry unfolds through a cyclical four-phased process, which has been named the “4-D cycle” [Cooperrider and Whitney 2000]. The 4Ds stand for the four principal activities of appreciative inquiry: Discovery; Dream; Design; and Destiny. Figure 1 shows the 4-D cycle and its four phases, which are described as follows:

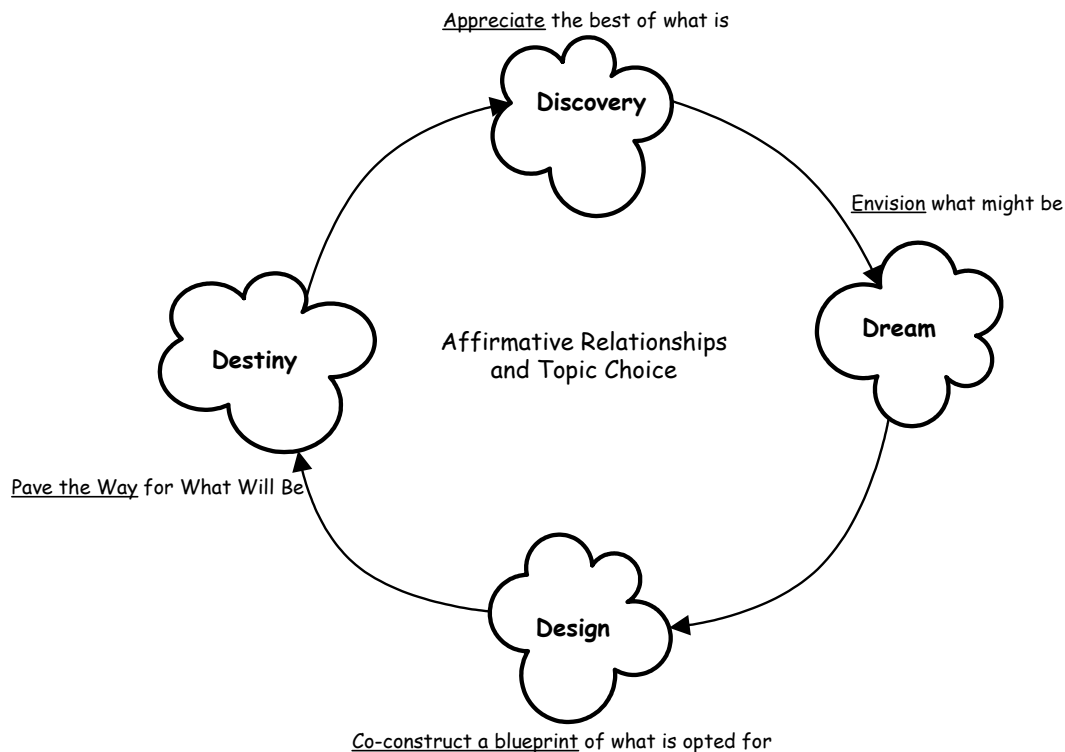


Figure 1. The 4D Cycle

³ In the same fashion, psychologists differentiate between the study and measurement of positive emotions and negative emotions. For example, a study inquiring about how to prevent feelings of sadness and depression is inherently different from a study about how to sustain a sense of joy and happiness.

Discovery

Appreciative inquiry starts with a reflection on moments of excellence and achievement. We look for moments in which we, or the organization as a whole, felt most alive, most creative, and most effective. We identify core life-giving factors, best practices and core capacities and strengths that made these high points possible. This retrospective journey into the positive core makes us “appreciate the best of what is.” It sets an appreciative tone, generates much positive affect, and evokes pride, connectedness, hope and opportunity. In this phase, we revive the memories of forgotten high points, make the affirmative language and mind set explicit, and reconstruct the past in an enlivening frame. The Discovery phase prepares the ground for an affirmative inquiry of the possibilities. It is the positive core that all stem from and all return to.

Dream

Grounded in the “positive core” and guided by a specific “affirmative topic choice,” in the second phase we leap into the far future and “envision what might be.” We seek to identify the most exciting possibilities, to ignore any possible constraints, to think in idealistic terms, and to assume that the sky is the limit. In this generative phase we aim to challenge the status quo, to think out-of-the-box, and to imagine the unimaginable. It is a divergent exercise in which we stretch the boundaries of our understandings, identify new ways of seeing, and expand the realm of possibilities. Though it aims high, the inquiry into the future during the Dream phase is grounded in a familiar history and stems from the core capacities, which were identified earlier in the Discovery phase. The Dream phase is an opportunity to catalyze a dialogue about the core values, the true callings, the fundamental objectives, and the rising opportunities. Through conversations and discussions, a collective statement about a desirable future emerges. By enabling an affirmative and focused collective daydreaming, we can escape the gravity of deficit-based thinking, open up an array of new possibilities, and let our minds fly to the best places we can imagine.

Design

In the third phase, we build on the already established core capacities and vision, and focus on the near future. Equipped with an arsenal of articulated, situated, collectively produced and invigorating images of possible futures, we zoom in and aim to “co-construct a blueprint of what is opted for.” The Design phase is a convergent process that results in a compelling collective statement that conveys an actionable and powerful strategic intent. In the Design phase, we transform our “wish list” into a “shopping list”—the “dreams” become a doable plan of concrete action and a blueprint of a better world.

Destiny

The final phase in the cycle of appreciative inquiry is about turning the blueprint of the desirable future into an emerging reality through self-driven action. The key driving forces in this phase are the whole system’s commitment, contribution, collaborative effort, and realization. Though a blueprint signifies a structural planning and managed execution, here it is not about a neatly engineered plan that is executed in an orderly fashion. Quite the contrary, this phase of appreciative inquiry is about a spontaneous grassroots action, in which those who are involved are empowered to adjust, to re-think, and to do anything deemed required in the spirit of the design blueprint in order to “pave the way for what will be.” The last phase aims not only at a concrete objective and achievement per se, but also at nurturing an environment conducive to a sustainable effort and ongoing momentum of participatory affirmative action and collective inquiry. The last phase completes the cycle of appreciative inquiry and sows the seeds of the next cycle.

Conducting an appreciative inquiry goes far beyond the obvious lens change. Shifting from identifying “problems to be solved and circumstances to avoid” to searching for “generative capacities and desired futures to embrace” is more than a mere positive spin. Adopting an appreciative inquiry lens implies one’s conscious commitment to a humanistic, affirmative, and

participative way of doing, which does not characterize the main stream of information systems practice, research, or education. Appreciative inquiry typically has a ripple effect that reverberates through every level. It has direct implications for the kinds of relationships that actors or stakeholders form with one another, the energies that drive their actions, the resultant insights, and probably the nature and spirit of related future undertakings.

An inherent part of appreciative inquiry is its affirmative and positive stance with respect to the world. This is not to say that there are no more problems to be solved in information systems, flaws to be fixed, recurrent misguided behaviors, and other cracks to be patched up. Nonetheless, following the appreciative approach, we explicitly and intentionally put all these caveats aside and focus our attention on seeking and building upon what we consider to be strengths, capacities, possibilities, goodwill, modalities of cooperation, and the grace of human spirit.

III. WORKSHOP DESCRIPTION

The workshop is designed to as a module in a semester-long course in information systems analysis and design offered to graduate or undergraduate students in management schools. The workshop is designed as a sequence of two meetings. The first meeting focuses on system analysis and requirements specification. The second meeting focuses on system design and implementation planning. Other design configurations can be tailored to fit any desirable context.

The core participating unit in the workshop is a design team of about six participants each and preferably at least one stakeholder from the sponsoring organization.

The workshop involves a series of tasks that together stimulate a creative collaborative process of participative design. Following is a brief description of the tasks. Further details about the facilitation are available in Appendix II and about the group process in Appendix III.

WORKSHOP SEQUENCE – PART 1 OUTLINE

Sponsor Introduction (60 minutes)

The workshop begins with a presentation by the client that is sponsoring the project, usually the director or head of the organizational unit, who can provide firsthand description of the current situation, the reasons that prompted the projects, and the expectations from the participants. This presentation is also a good opportunity to exhibit a commitment to the participatory design process and to answer questions that students may have about the organization and the project.

Facilitator Introduction (45 minutes)

Next, using the first five pages of the Participant's Guide (Appendix III), the facilitator introduces the principles of appreciative inquiry methodology in connection to collaborative design and accelerated application development. The facilitator ends this segment with a review of the workshop's ground rules, process, and expectations.

Task #1 (20 minutes)

Unless specified, tasks are carried out by the team members who are seated together around the team's table. The first task is unique in that sense—it is performed in one-on-one pairs.

Task 1 focuses on the discovery of capacities. It asks each participant to identify the talents, capabilities, and skills that he or she can bring to the team; it asks him or her to list the five most dominant stakeholders of CREI (or the underlying organization), and to identify which of their strengths and core capacities can be enhanced by information technology; and finally, it asks each participant to list new features, contributions, or opportunities that information technology can provide to CREI's community hub.

Each person in the pair interviews his or her counterpart as specified in the guide and takes notes. Later, the interviewer uses the notes to present the interviewee to the rest of the team around the table. This process is a typical kick-start of appreciative inquiry. It helps to frame the conversation in a positive tone, building upon capacities from the ground up, and reinforcing the notion of mutual responsibility and respect, which are in the core of collaborative relationships.

Task #2 (30 minutes)

Each person takes a few minutes to introduce the person he or she has just interviewed to the people around the table. During each introduction, everybody takes notes, which are used after the introduction is completed to compose an aggregated list of the most significant core contributions, capabilities, and opportunities that were shared at the table.

Task #3 and #4 (30 minutes)

These tasks complete the discovery process, first identifying and framing the core mission of the underlying organization, and then the core building blocks of Checkland's [1981] Soft Systems Methodology (Customers, Actors, Transformations, Worldview, Owners, and Environment). The final product of this phase is a Rich Picture of the "as is" situation.

Overall sharing (20 minutes)

The end of the Discovery phase is a good time for cross-table (cross-team) sharing. The facilitator should use this opportunity to perform a "process check" with the participants, answer questions about the process, and introduce the next segment.

Task #5 (40 minutes)

This task involves an exercise of "wishful thinking" in which each person envisions an ideal scenario of a system (or component thereof) assuming that no limits exist. This exercise provides the affirmative seeds of the design blueprint to come. The outcomes of this phase, too, are excellent for cross-table sharing.

Task #6, #7, and #8 (90 minutes)

Following the futuristic "Dream" model, the team delineates three possible design alternatives based on today's technology. Then, based on grounded design alternatives, they frame a "SMART" project objective. This difficult task requires some time for honing and reflection, but for the task at hand, a crude definition should be sufficient. Finally, the table should attempt to scope the project and define its boundaries. If time permits, the facilitator should initiate cross-table sharing at the end of this phase.

Task #8 (40 minutes)

The final product of part 1 of the workshop should be an initial "to be" design blueprint. At this point, participants should have a good grasp of the requirements. During the period until part 2 begins, the participants will be engaged in further design and project planning.

Conclusion and overall sharing (15 minutes)

The end of part 1 should be used for overall cross-table sharing about the process and the workshop overall.

WORKSHOP SEQUENCE – PART 2 OUTLINE

Facilitator Introduction (20 minutes)

At the beginning of the second workshop day, the facilitator reviews briefly the principles of appreciative inquiry methodology in connection to collaborative design and accelerated application development. Then, he or she reiterates the workshop's ground rules, process, and expectations. Finally, the facilitator opens the floor for questions, particularly questions directed to the project sponsor. (The Participant Guide of this part is available as the second half of Appendix III).

Task #1, #2, and #3 (45 minutes)

At this phase, participants should review and tighten the work done in the previous workshop and during the break between Part 1 and Part 2. They rehash the project's "root definition," the design objectives and project scope. Sharing is appropriate at the end of this part to verify that everybody is on the same page.

Task #4 (60 minutes)

Modeling with Rich Pictures, DFDs, and Process Flow diagrams requires much practice and tends to be confusing for novices. The time allotted in the workshop assumes that the participants are already familiar with the above modeling techniques. (These techniques should be acquired ahead of time through a regular classroom curriculum, a supplementary workshop, or professional experience). The time in the workshop should be dedicated mostly to fixing, tightening up, and validating the models that have been prepared by the group during the break since the first meeting. This point in the workshop is also a good opportunity to turn any deficit-based statements and vocabularies into positive and outcome oriented ones in the spirit of appreciative inquiry.

Task #5 (75 minutes)

This task aims to help identify the few key areas where things must go right to successfully achieve the anticipated objectives and benefits. Each team discusses possible success factors of the proposed system (critical features to include in the design blueprint), as well as success factors of the project itself (issues to consider during the development and implementation). Cross fertilization and sharing across the room is most appropriate at the end of this phase.

Task #6 (40 minutes)

Once the design blueprint emerges, each team identifies software/hardware options and performs (or rehashes) the alternatives analysis.

Task #7 (45 minutes)

This task aims to set (or rehash) a realistic project plan using a Gantt chart. This phase tends to confuse students who wonder whether they ought to plan their own design project (i.e., the deliverables of the workshop) or the "to be" project which they design for the client. Although the emphasis is on the "to be" project for the client, it is a good idea to ask them to have both (but present only the latter in the final report).

Poster preparation and presentations (90 minutes)

The capstone of the workshop is a poster presentation by each team that highlights their design blueprint. This is not only a good opportunity for overall sharing, but also an important progress assessment point, which allows the facilitator to identify trailing teams and help them to catch up.

Proposal writing (30 minutes)

Prior to departure, and once all the abstract components of the final report become more concrete, the facilitator should reframe once again the requirements pertaining to the final write-up.

Conclusion and overall sharing (15 minutes)

Finally, the end of part 2 should be used for overall sharing about the process and the workshop overall.

WORKSHOP ASSESSMENT

The live project provides students with firsthand experience of systems analysis and design, and enables each participant to make a difference. They are expected to make contributions both as a teammate in their immediate group and as classmate who is part of a development task force. Each group is expected to produce a professionally prepared final report that includes systems analysis, a design blueprint, and recommendations. In addition, each group is expected to present their findings and to demonstrate the key design features to the client organization.

Evaluation of the participants' performance is based on two main elements: the quality of each group's final report and overall client satisfaction. To enhance the sense of camaraderie and collaborative spirit, individual performance is not assessed in this workshop⁴. A detailed grid of evaluation criteria of the final report is available in Appendix I. Client satisfaction, and particularly adoption of recommendations and design blueprints, is a very clear indication of success. In some instances, a client may also hire some of the workshop participants to implement the design.

ACKNOWLEDGEMENTS

The author thanks to David Cooperrider for his able advice and assistance in developing the workshop, and to the Center for Business as an Agent of World Benefit for its support. This work would not be possible without the encouragement and uncompromising support of the Information Systems Department in Weatherhead School of Management.

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⁴ Nonetheless, the workshop is part of an academic course in which each student is subject to assessment of his or her individual performance.

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APPENDIX I. SAMPLE WORKSHOP DESCRIPTION (CLASS HANDOUT)

Systems Analysis and Design - Spring 2005

CLASS/GROUP PROJECT

Purpose

The project is designed to provide you with an opportunity to apply the concepts and techniques learnt in a real world setting. This semester, we will design an information system for the *Center for Regional Economic Issues (CREI)*. This is a real project that will provide you with firsthand experience of system analysis and design. You are expected to make contributions both as a teammate in your immediate group and as classmate who is part of a development task force.

Process

The project will be coordinated by the selected team leaders. The workshops will be dedicated for group coordination and the overall design. Self-managed teamwork in groups is expected throughout the semester. Groups should make their product visible and use it in the classroom. Basic work structure is provided by our time constraints and the milestones below.

Milestones

Given the nature of the class project, we will meet for two extended workshops in Saturday, January 30th and March 19th-check the course outline for further information about class meetings. Group report and presentation is due on the day of the last class.

In order to keep the project on track and keep teams' product visible, groups are required to make their preliminary reports public. Please post your reports (and other materials) in your Blackboard Forum/Discussion Board as follows:

- Jan 28 - Finalize group formation
- Feb 03 - Module description, root definition,
- Feb 24 - Project plans
- March 17 - Alternatives analysis and initial design
- March 24 - Improved design and technical specification
- March 31 - Beta (prototype/mockup)
- April 07 - Draft of final report (two weeks a head of time!!)
- April 21 - Product Delivery (report + class presentation)

Format and Presentation

Each group should prepare and present a final report in a proposal form, which is directed to the client (not a professor). The written proposal and final presentations should reflect the highest professional standard that you can reach.

Evaluation

Overall, the Class/Group Project accounts for 40% of the final grade. Evaluation will be based on the following evaluation matrix.

Help and Clarifications

Additional information and guidance are available. If you need help, please contact me as early possible. You are encouraged to submit an early draft for feedback.

Project Evaluation Matrix

| Criteria | Points | |
|--|--------|--|
| Objectives, Root definition | 1 | |
| Alternatives' analysis | 1 | |
| New system design specification | 4 | |
| Technical requirements' specification | 1 | |
| Project implementation plan | 1 | |
| Feasibility analysis | 1 | |
| Interface/Screen design | 2 | |
| Quality control/Feedback | 2 | |
| Integration with other modules and system's environment | 2 | |
| Supporting documents | 1 | |
| Creativity, innovation, and concrete contribution of final product | 4 | |
| Time management - meeting milestones of interim reports | 4 | |
| Flow and style of the final report | 3 | |
| Class presentation | 3 | |
| Overall client satisfaction | 10 | |
| Overall | 40 | |

APPENDIX II. SAMPLE WORKSHOP AGENDA (FACILITATOR DASHBOARD)

PART 1 - WORKSHOP AGENDA

| Time (minutes) | Phase | Task |
|-------------------|------------------|--|
| 09:00-10:00 (60) | | -Project introduction + Q&A by Sponsor |
| 10:00-10:45 (45) | | - Overview (basic process of workshop) - AI Principles and Accelerated Design |
| 10:45-11:00 (15) | | - coffee break |
| 11:00-12:40 (100) | <i>Discovery</i> | #1-one-on-one (10+10 min) #2 table talk (30 min) #3 (15 min) #4 (15 min) -overall sharing of high points (20 min) =>PROCESS CHECK |
| | | Working Lunch |
| 12:40-01:20 (40) | <i>Dream</i> | #5 "dream" model (20 min) -share overall dream (20 min) |
| 01:20-02:50 (90) | <i>Design</i> | (60 min- tasks #6,7,8) #6Alternative analysis - #7 Define SMART objective #8 Define Project Scope -sharing (30 min) |
| 02:50-03:05 (15) | | - coffee break |
| 03:05-03:45 (40) | | #9 draw "To be" Model/Rich picture (40) |
| 03:45-04:00 (15) | | Conclusion => PROCESS CHECK COLLECT GROUP DELIVERABLES!! |

PART 2 - WORKSHOP AGENDA

| Time (minutes) | Phase | Task |
|------------------|-----------------------|---|
| 09:00-09:20 (20) | | Introduction and sharing |
| 09:20-10:05 (45) | <i>Design(Rehash)</i> | (30 min- tasks #1,2,3) #1 Rehash a SMART project objective #2 Describe design objectives #3 Re-Define Scope -sharing (15 min) |
| 10:05-11:05 (60) | | #4 DFD modeling Clinic and Validation |
| 11:05-12:20 (75) | | #5 Success Factors (60 min) -share overall (15 min) |
| | | Working Lunch |
| 12:20-01:00 (40) | Delivery | #6 Alternative analysis -- Rehash software/hardware choices |
| 01:00-01:45 (45) | | #7 -Project Plan |
| 01:45-03:15 (90) | | Poster preparation and presentations - coffee break |
| 03:15-03:45 (30) | | Proposal writing, review current status and identify areas for improvements |
| 03:45-4:00 (15) | | Conclusion => PROCESS CHECK COLLECT GROUP DELIVERABLES!! |

APPENDIX III. SAMPLE WORKSHOP PROTOCOL (PARTICIPANTS GUIDE)

Editor's Note: This appendix shows the complete test used in the workshops in a compressed form. For the format actually used by students, see Appendix III of the Article version of this paper.

Part 1

Designing myCREI - A Web-Based Community Hub
for the Center for Regional Economic Issues (CREI)

System Analysis via Appreciative Inquiry

Moderator: Michel Avital

Participant Name: _____

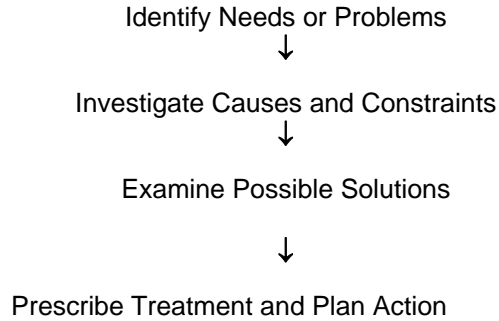
"Appreciative Inquiry can get you much better results than seeking out and solving problems. That's an interesting concept for me, and I imagine for most of you, because telephone companies are among the best problem solvers in the world. We troubleshoot everything. We concentrate enormous resources on correcting problems that have relatively minor impact on our overall service performance...when used continually and over long period of time, this approach can lead to a negative culture. If you combine a negative culture with all the challenges we face today, it could be easy to convince ourselves that we have too many problems to overcome – to slip into paralyzing sense of hopelessness. And if you flip a coin, we have so much to be excited about. We are in the most dynamic, and the most influential business of our time. We ought to be excited, motivated, and energized. We can be; if we just turn ourselves around and start looking at our jobs, and ourselves, differently; if we kill negative self-talk and celebrate our successes. If we dissect what we do right and apply the lessons to what we do wrong, we can solve our problems and re-energize the organization at the same time.... In the long run, what is likely to be more useful: demoralizing a successful workforce by concentrating on their failures, or helping them over their last few hurdles by building a bridge with their successes?"

Don't get me wrong. I'm not advocating mindless happy talk. Appreciative Inquiry is a complex science designed to make things better. We can't ignore problems – we just need to approach them from the other side."

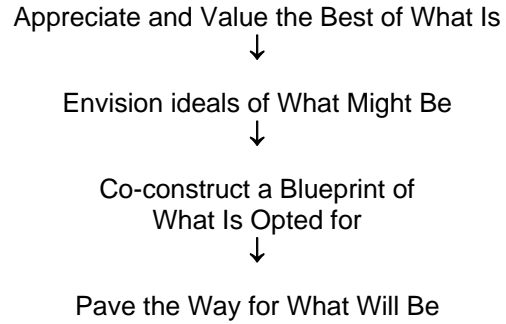
Thomas H. White, President, GTE Telephone Operations (Vital Speeches of the Day, 1996)

JUXTAPOSING PROBLEM SOLVING AND APPRECIATIVE INQUIRY

Problem Solving



Appreciative Inquiry



Guiding Metaphor:

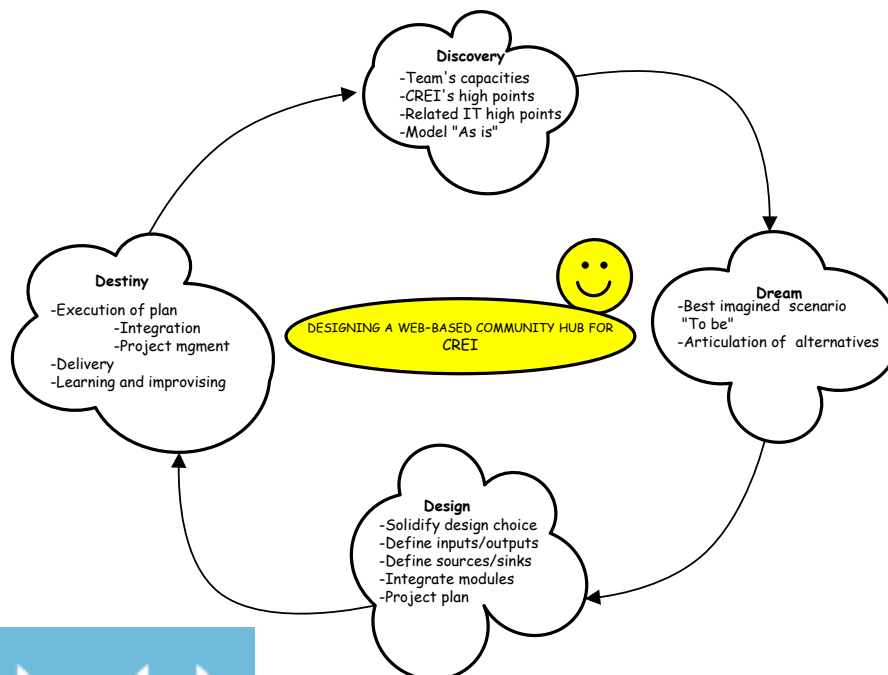
I am a "problem solver"
and
Organizational life is a
"problem-to-be-solved"

Guiding Metaphor:

I am a "dream catcher"
and
Organizational life is a
"dream-to-be-embraced"

*Adapted from Cooperrider and Whitney (2000)

THE 4-D CYCLE: APPRECIATIVE INQUIRY OF MYCREI - A WEB-BASED COMMUNITY HUB FOR THE CENTER FOR REGIONAL ECONOMIC ISSUES (CREI)



DISCOVERY: ARTICULATING THE POSITIVE CORE

Opening conversation in Pairs

(Please take brief notes as you listen to your partner's stories)

#1.

--Given the objectives and designated role of your team, let's first identify the talents, capabilities, and skills that you can bring to the team. Tell a short story that refers to your related experience as a team member.

| |
|---|
| - |
|---|

--CREI is a hub that provides services to diverse communities—regional developers, entrepreneurs, students, investors and various host organizations. A dedicated and customized information system can provide many opportunities to the various stakeholders associated with CREI. Please specify what is unique to the communities associated with CREI, and name the most significant opportunities that current information technologies may provide them.

| CREI's Stakeholders: List the five most dominant stakeholders of CREI, and identify which of their strengths and core capacities can be enhanced by information technology. | Information Technology Capacities: What are the new features, contributions, or opportunities that information technology can provide to CREI's community hub? |
|--|---|
| 1. | 1. |
| 2. | 2. |
| 3. | 3. |
| 4. | 4. |
| 5. | 5. |

#2 – Take a few minutes to introduce the person you interviewed to the people at your table. What was the most interesting or exciting thing you learned about your partner? Share the best story and insights that resulted from your interview.

–During each introduction, make notes about the strengths, capabilities, and opportunities you hear about CREI's stakeholders, information technology, and about what the person is capable of doing.

–When the introduction has been completed, discuss and list using the worksheet below the most significant core contributions, capabilities, and opportunities that were shared at your table.

| | | | | | | | | | | | | | |
|---|---|-------|--|----------|--|----------|--|----------|--|----------|--|----------|--|
| CREI's Stakeholders: List the five most dominant stakeholders of CREI, and identify which of their strengths and core capacities can be enhanced by information technology. | Information Technology Capacities: What are the new features, contributions, or opportunities that information technology can provide to CREI's community hub? | | | | | | | | | | | | |
| 1. 2. 3. 4. 5. | 1. 2. 3. 4. 5. | | | | | | | | | | | | |
| <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Name:</td> <td>Team Member's Personal Capacities and Possible Role:</td> </tr> <tr> <td>1. _____</td> <td></td> </tr> <tr> <td>2. _____</td> <td></td> </tr> <tr> <td>3. _____</td> <td></td> </tr> <tr> <td>4. _____</td> <td></td> </tr> <tr> <td>5. _____</td> <td></td> </tr> </table> | | Name: | Team Member's Personal Capacities and Possible Role: | 1. _____ | | 2. _____ | | 3. _____ | | 4. _____ | | 5. _____ | |
| Name: | Team Member's Personal Capacities and Possible Role: | | | | | | | | | | | | |
| 1. _____ | | | | | | | | | | | | | |
| 2. _____ | | | | | | | | | | | | | |
| 3. _____ | | | | | | | | | | | | | |
| 4. _____ | | | | | | | | | | | | | |
| 5. _____ | | | | | | | | | | | | | |

#3 Please refer to the presentation of CREI's Director, your web research and the discussion so far to reframe the mission and core objectives of CREI. Then, use the table below (and the CATWOE model) to identify the core activities of key stakeholders.

Mission:

| | Stakeholders (who) | Activities/Transformations (what) |
|-----------|-----------------------|--------------------------------------|
| Customers | | |
| Actors | | |
| Owners | | |

#4 Again, please refer to the presentation of CREI Director, your web research and the discussion so far, and draw quickly in the space below a model/rich picture that describes the information exchanges/flows among the identified communities in the current state.

“As is” Model

DREAM: ENVISION WHAT MIGHT BE

#5. Let's put ourselves in a world in which all is possible, and assume that tonight, after meeting here, you/we go into a sound sleep, and when we awaken it is ten years into the future—the year is 2015. While you/we were asleep many good developments and miracles happened—and information technology has developed to fulfill your wildest dreams.

Now, you awaken. You are happy with what you see. It's the kind of stuff you always wanted to have. You've just discovered a time capsule with notes about the CREI's community hub, and decided to finish the design using the new technologies. What kind of design will it be?

Be as Affirmative, challenging, and actionable as you can.

"Dream" Model

| |
|--|
| |
|--|

DESIGN: CO-CONSTRUCT A BLUEPRINT OF WHAT IS OPTED FOR

#6 Given your futuristic "Dream" model, what kind of best possible design alternatives based on today's technology can you identify? Please use the worksheet below to identify a few alternatives.

| | Alternative 1 (min) | Alternative 2 (mid) | Alternative 3 (max) |
|------------------------------------|---------------------|---------------------|---------------------|
| Brief descriptions of key features | | | |

#7 Define project objective and the desired results. (*Root Definition*)

Define a SMART objective: SMART - Specific, Measurable, Affirmative, Realistic, Time-framed

| |
|--|
| |
|--|

#8 Define the scope.

Given your objective, identify the project scope in terms of people (communities involved, training), processes (services provided), and technologies to be used (Software/ Hardware choices).

Please use the worksheet below to identify a few alternatives.

| People/Stakeholders | Processes/Tasks | Technologies |
|---------------------|-----------------|--------------|
| | | |
| | | |
| | | |
| | | |

#9 Now refer to your previous work, and draw quickly in the space below a model/rich picture that describes how the identified stakeholders will get proprietary and general information in the new system.

Identify all major (1) transformations (processes) and (2) inputs and outputs of your system in relation to (3) environment and other modules, (4) people involved.

“To be” Model

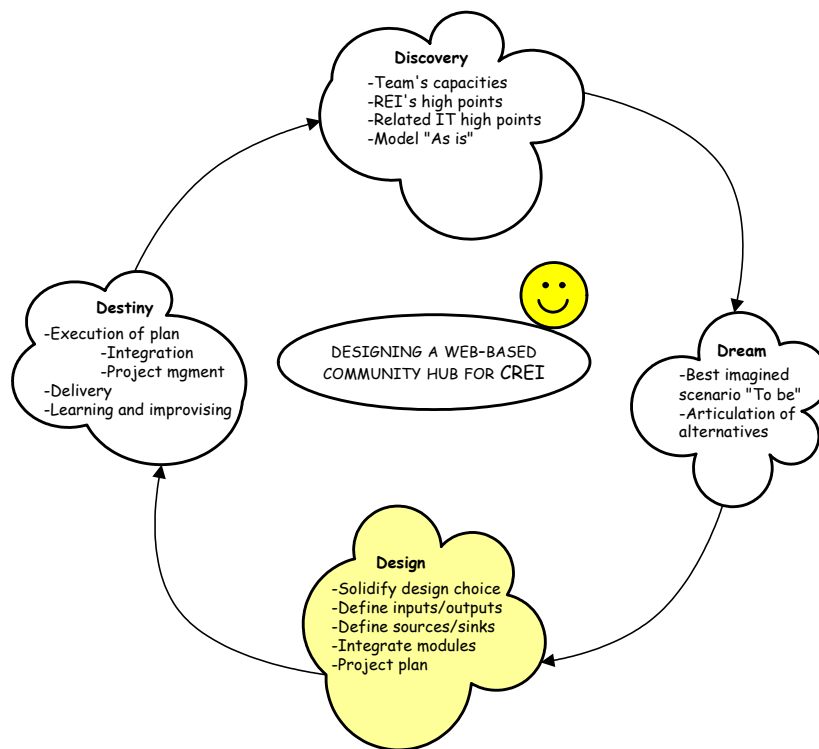
Part 2

Designing myCREI - a Web-Based Community Hub for the Center for Regional Economic Issues (CREI)

System Design and Implementation Plan

Moderator: Michel Avital

Participant Name: _____



Design: Co-construct a blueprint of what is opted for

#1 Rephrase project objective and the desired results. (*Root Definition*)

Define a SMART objective: SMART - Specific, Measurable, Affirmative, Realistic, Time-framed

| |
|--|
| |
|--|

#2 Please use the worksheet below to describe your specific design objectives.

| | Module 1 | Module 2 | Module 3 |
|------------------------------------|----------|----------|----------|
| Brief descriptions of key features | | | |

#3 Refine the scope.

Given your objective, use the worksheet below to identify the key components of each module in terms of people (producers and consumers of information), processes (activities), and data stores (information repositories). This is the basis for your first level DFDs.

| People (information sources and sinks) | Processes/Activities/ Tasks | Data Stores |
|--|-----------------------------|-------------|
| 1. 2. 3. 4. 5. 6. 7. 8. 9. | | |
| 1. 2. 3. 4. 5. 6. 7. 8. 9. | | |
| 1. 2. 3. 4. 5. 6. 7. 8. 9. | | |

#4 Now, refer to your previous work, and make sure you have the following:

- Rich pictures of the overall system and each of the modules
- Context diagram and DFD of each module
- Process flow diagrams, if necessary

Destiny: Pave the way for what will be

#5 - Identify success factors in the context of your objective.

Identify the few key areas where things must go right in order to successfully achieve objective and goals. What are the main areas in which results, if they are satisfactory, will ensure the anticipated benefits?

-List the critical success factors of the CREI's community hub.

- 1.
- 2.
- 3.
- 4.
- 5.

-How can you address these areas in your design of the modules and project plan?

- 1.
- 2.
- 3.
- 4.
- 5.

#6 At this point, we need to make software/hardware choices. Based on your design features, identify and compare possible applications, hardware and vendors that should be considered.

| |
|--|
| |
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#7 In addition to a design blueprint, you are expected to develop a concrete implementation plan. Based on your design features and the available resources, identify small tasks, their dependencies, and the derived workflow.

For each small task, define the following:

- concrete deliverables
- start and completion date
- dependencies
- prerequisite knowledge of executing person or team

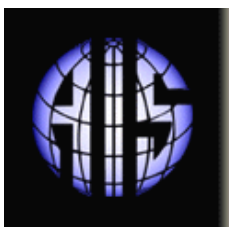
-Using a Gantt chart, summarize your initial plan below and keep refining it later (preferably using Microsoft Project).



ABOUT THE AUTHOR

Michel Avital is Assistant Professor of Information Systems at Weatherhead School of Management at Case Western Reserve University. Michel's research focuses on application of positive modalities to the study and implementation of information technologies in human organizations. He has a keen interest in information environments and technologies that promote and encourage respect for human values, self-growth, interpersonal relationships, organizational ownership, and collaborative action. Overall, his research combines both soft and hard methods to explore information systems project success, knowledge management, ubiquitous computing, social networks, virtual communities and appreciative inquiry. Currently, Michel teaches graduate and undergraduate-level courses on e-business and systems analysis and design, and doctorate-level courses on research methodologies.

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