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# Transdisciplinary Case Studies as a Framework for Working in Global Project Teams

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## INTRODUCTION

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“Two corporations, one German and one French, wanted to collaborate in order to introduce a new product to the global marketplace. Representatives of the respective companies met in order to develop a concept for the joint venture.

The first meeting was led by a member of the French group. Prior to the meeting, the German participants prepared intensively and wrote a twelve-page concept paper, which they handed out as a basis for discussion at the beginning of the meeting. The French representatives reacted in response with anger, which they, however, concealed.

The second meeting was led by a German representative who repeatedly exhorted the French to adhere to the agenda and remain on topic. The French felt that their creativity was being inhibited and that the meeting was dominated by the Germans. After a certain point in the meeting, the French only responded by saying “yes” in order to express their anger and did not provide any additional suggestions. However, the Germans did not recognize that the repeated responses of “yes” were meant to be ironic. When the Germans recognized that their French colleagues had no intention of implementing the jointly agreed-upon resolutions, they became furious. They called the French “unreliable wind bags” and were about to break off the collaboration” (Hoffmann 14-16).<sup>1</sup>

The preceding scenario illustrates the multiple challenges of working in global project teams on micro and macro levels. In this case, the challenges range from different (corporate) cultures, to assumptions regarding how project teams are

managed and what defines national identity, to linguistic (mis-)communication, as well as unconscious socio-historical values that impact the unwritten “rules of engagement.” I will examine the use of transdisciplinary case studies as a platform and framework for learning modules that can better prepare students to work in global project teams and assume leadership positions as global project managers.

I will also present a variety of case study *designs or formats* that can be used as *learning and assessment tools* by integrating transdisciplinary studies (e.g., entrepreneurship) and competencies that support global internships, service learning projects, or international research assignments. I have selected an entrepreneurship case study, because entrepreneurship spans almost all disciplines offered at universities, including the humanities, and requires students to utilize a diverse skill set, including engineering skills, business skills, and communication skills. While engineering students need an excellent command of the core technical competencies of their disciplines (e.g., in mechanical or electrical engineering), they also require financial skills and communication skills to be effective in working with other engineers and with colleagues in non-engineering areas (e.g., marketing) and with customers. Project teams frequently include members from many different corporate divisions who each bring their own expertise however they may not always be conversant with other divisions in the company or with suppliers and partners, e.g., in a joint venture. *Global* project teams add another layer of complexity through the linguistic and cultural background that each team member contributes to the team. In this sense, global project teams are inherently transdisciplinary, requiring the negotiation of multiple disciplinary and cultural perspectives in order to achieve the project objectives, e.g., development of a new product.

Although I will draw primarily upon my experience using case studies for global project management in the context of a world (foreign) language course

in German for Professions (with an emphasis on business and engineering), the frameworks that I will describe could easily be adapted to a broad range of disciplines. While there is extensive secondary literature available on case studies, project management, and intercultural communication, *I would like to focus on how all three areas intersect*. In particular, I will examine how competencies in project management and intercultural communication, which draw from multiple disciplines and experiential learning, can engage students more effectively in the process of developing a versatile skill set that will better prepare them for the unexpected challenges of working across borders.

## BACKGROUND: CASE STUDIES AND GLOBAL PROJECT MANAGEMENT IN AN INTERCULTURAL CONTEXT

Global project teams have become a critical function for the management of products and services for most corporations, yet relatively few studies have provided substantive research on the theory and practice of integrating intercultural communication into global project management. In his foreword to *Internationales Projektmanagement: Interkulturelle Zusammenarbeit in der Praxis (International Project Management: Intercultural Collaboration in Practice)*, Hasso Reschke observed that there has been a historical gap between the strategies and techniques of project management and intercultural management. As Reschke points out, until recently, relatively few project managers or team members were *systematically trained* for global assignments (V-VI). In her textbook, *International Project Management*, Kathrin Köster notes the need to more fully integrate cultural dimensions and a multidisciplinary approach to project management by using case studies (xxii).<sup>2</sup> Köster also underscores fundamental differences between a “standard” project and an “international project”, emphasizing the differences in scope and objectives (12-18). I would also add that many “standard” projects have actually become *de facto* international or global projects through complex dependencies on product design, sourcing, logistics, and distribution. Moreover, project teams in the US frequently include participants who may be living in the US, but they bring a multicultural and multilingual perspective from another country or region. Even when the international dimensions

of a project, such as sourcing and design, may not be key issues, other less visible aspects such as international currency fluctuations may rapidly impact the success of a project as costs rise and profits fall. Certainly, the boundaries between local and global projects are disappearing as virtual communication enables project development across borders and disciplines.

While many corporations hire external consultants to provide intercultural training and utilize assessment instruments to measure international competencies for project managers who are anticipating global assignments,<sup>3</sup> such training is, as Reschke notes, rarely embedded in a systematic development process which situates problem-solving and project management skills within diverse intercultural contexts spanning languages and borders (V-VI). As Carol Del Vitto observes, despite the plethora of training materials and inventories for assessments of cross-cultural training, “Many universities and a large number of companies continue, unfortunately, to underestimate the value of cross-cultural “soft skill” training” (n. pag.). As such, the development of intercultural communication skills is frequently an afterthought for corporations whose managers are embarking on a new global assignment rather than an intrinsic part of a global strategy that is articulated at every level of the organization.<sup>4</sup>

Claire Kramsch draws our attention to the challenges and complexity of applying or superimposing generic frameworks of intercultural communication across borders and boundaries, rather than focusing on the specific context(s) of communication (*The Intercultural* 21). Corporations or organizations based in diverse regions will bring their own version of what intercultural competence means, or what it means to be an engineer, in a particular cultural context.<sup>5</sup> While national identities may play a key role, Kramsch argues that: “More often than not, they [group participants] perform roles, identities, they take up subject positions in response to the demands of the moment, not because of some intrinsic national or cultural characteristic” (*The Intercultural* 21). One of the dimensions of the downward spiral of mistrust which occurs in situations like the French-German joint venture discussed at the outset of this article is that cultural assumptions are often reinforced through context-specific interactions. This scenario also draws our attention to the role of language. The case study narrative does not clarify which language was used for communication and in doing

so asks the reader to speculate on how group dynamics and communication might change based on the language being used, i.e., French, German, English, or switching languages depending on the group leader.

Although English is widely used as the official language for many global corporations and project teams, the diversity of cultural identities and positions held by team members are often masked rather than made visible through the assumption that English can bridge the gaps in communication and cultural differences. A survey of global project managers indicated that cultural differences ranked as the leading challenge for global project teams, followed by communication and language, legal and political aspects, technology and infrastructure, and personal challenges (such as moving and family) (Hoffmann13-14).

The selection of a language for a project team carries differing assumptions among the participants regarding power and authority. The use of translators and interpreters by team leaders who are non-native speakers also does not address the untranslatability of many concepts – a factor which is also frequently underestimated among global project managers with limited experience. As Grandin and Hedderich observe, “Also, given the fact that culturally important and unique words often do not have a direct equivalent in the English language, the culturally competent person[s] understands the limitations presented by a lack of proficiency in the other culture’s language” (367). Some project managers also indicate the need for multiple, local “cultural interpreters” to assist project managers (Dörrenberg and Hoffmann 46). Kramsch points out that, the notion of “equal speaking rights” is also a key issue in reexamining the dynamics of intercultural communication and the ability to develop intercultural competence (*The Intercultural* 22). Despite the use of English as a global language of corporate communication, local practices frequently favor the use of the participants’ own language. Claus Altmayer argues that the notion of intercultural competence has less to do with mastering a knowledge base or identifying national characteristics of cultural behavior than providing students with the tools for critical reflection to reexamine, reinterpret, and modify their own perspectives based on a variety of experiences – i.e., fostering openness to diversity (40). Undoubtedly this is a challenge for educators, students, and practicing professionals, but one

which can be more systematically integrated into curricula and addressed in professional practice. I would suggest that case studies, based on everyday experiences from practicing professionals and students themselves (e.g., through experiential learning in project teams) may provide a more textured and nuanced analysis of project management in diverse cultural contexts, as suggested by Kramsch and Altmayer. While many global projects involve multiple corporate divisions or subsidiaries that may be managing corporate supply chains, logistics, and joint ventures on a large scale, global project management is also an integral part of smaller organizations that may be sourcing products and services or providing them globally. Before turning to a more detailed discussion of designing frameworks for transdisciplinary case studies, it is also useful to examine the core competencies of global project managers from the perspective of the global project management profession. Yvonne-Gabriele Schoper identifies the following core competencies required for all team members and managers (164-65):

- 1) **Professional Competence or Expertise** (training in the profession, technical know-how, business knowledge and competency; organizational know-how, and training in project management)
- 2) **Social Competence** (the ability to act appropriately based on one’s own resources and according to the situation, depending on the individuals involved in the interaction and their respective norms, values, or rules; acceptance and openness to difference; acceptance of responsibility)
- 3) **Intercultural Competence** (the ability to be conscious of one’s own cultural identity, to know other cultural models, and to be open to dealing with other cultures; the ability to build consensus among diverse cultural stakeholders in the team in a manner that integrates difference while facilitating a collaborative working environment)

As noted above, proficiency in multiple languages is also a core competency of global project managers and their team members. Certainly global project managers operate in a number of areas that impact the effectiveness of global teams and the daily progress of their operations. For example, Dörrenberg and Hoffmann recommend that managers allow 50% more start-up time for

global projects, reflecting the complexity and challenges of developing new competencies and collaborations outside domestic markets (45). Because diverse cultural contexts may have a profound impact on all phases and outcomes of a project, cultural competency is inextricably linked to the planning and implementation of global projects.

I would suggest that the following dimensions, activities, and processes of global project management that are presented by Hoffmann et al. can be readily adapted as a framework for creating cases studies, learning goals, and assessments for global project management:<sup>6</sup>

## **DIMENSIONS OF GLOBAL PROJECT MANAGEMENT**

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- 1) **Project Environment:** identifying stakeholders (within various sites and across borders); ability to understand and respond to the political dynamics in particular countries or sites and their impact on the progress of the project; legal and contractual factors; international negotiations (coordinating negotiations with partners in multiple countries and cultures); infrastructure management (transportation, logistics, support structure)
- 2) **Communication and Information:** creating an environment for effective communication (establishing principles of effective communication for stakeholders and team members; understanding the dynamics of face-to-face and virtual communication); verbal and non-verbal communication; multilingual communication skills; use of interpreters and translators
- 3) **Team Development:** types of teams; building a global project team and preparation for global assignments; start-up workshops; phases of team development and conflict resolution within teams; coaching the team
- 4) **Leading Global Teams:** identifying qualifications for team leaders (selection of leaders); building intercultural teams and selection of team members; group dynamics within the team; leading virtual teams (bridging geographic distances; creating trust; creating a team identity)
- 5) **Decision-Making:** processes of decision-making in a global context (factors that influence decision-making in diverse cultures); personality factors; project-specific factors
- 6) **Conflict Management:** recognizing factors that contribute to conflicts and how conflict is perceived or defined across cultures; negotiating frameworks for conflict resolution
- 7) **Organization and Project Control:** awareness of types/forms of organizations; factors influencing the organization (e.g., budget, timeline); information flow (managing information); dealing with unexpected changes; cultural factors (notions of productivity, capacity, efficiency, overhead); international conferencing; interventions (consequences of intervening in projects with supervisors or management team)
- 8) **Risk Management:** defining risk (notions of risk across cultures); factors contributing to risk in a global context; assessing levels of risk; communicating risk; managing risk (dealing with risk within specific cultural contexts)
- 9) **Intercultural Differences in Quality Assurance:** defining concepts of quality in different cultures; notions of product quality across cultures
- 10) **Management of Suppliers and Supply-Chain:** cultural contexts of sourcing off-shore; partnerships with foreign suppliers; criteria for selecting and managing foreign suppliers

These dimensions provide a useful point of departure for developing case studies as well as a productive tool for generating discussions and assessing student learning. While a case study would not attempt to address all of the areas of activity above, it is important to note that the dimensions are interrelated and should be considered as part of a more holistic approach to global projects.

## **DESIGNING FRAMEWORKS FOR TRANSCULTURAL CASE STUDIES**

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As we turn to a discussion of designing cases studies, I will focus on their use as part of skill development for students working in global project teams and as a framework for intercultural or global competency. Before introducing a case study in a course, I discuss background information on global project teams and provide at least one theoretical

approach to intercultural communication that students can use as a framework for discussion and analysis of case studies. This theoretical background provides a context for the more specific case study activities, discussion, and assessment that follow. As noted above, there is an extensive body of research available on designing and using case studies which I will not replicate here. However, I would like to underscore some of the following design components that I have found to be productive, based on class interactions and student feedback. Many of the following elements are particularly useful for intercultural case studies.

- 1) **Identify potential case studies that are aligned with the course and/or curricular objectives.** What is the overall objective of the case study activity? How will the instructor assess and measure student learning throughout the case study process? How might it interface with other global assessments for the course, or for study abroad and internships?
- 2) **Use actual situations (with minor modifications) for case studies.** Numerous sources are available for case studies including, but certainly not limited to: media reports on the successes or failures of projects (that may need to be contextualized or corroborated through other sources); studies in professional journals; interviews with participants or experts or guest speakers; site visits that include information on specific projects; corporate websites on the history of products and projects; instructors' experience on projects; students' experiences on internships or projects.
- 3) **Identify and create a strong narrative.** A good case study will stimulate interest in the topic or problem. Know your audience and make modifications to the narrative if necessary. While most case studies should have a beginning, middle, and end (conclusion), I suggest that the parts of the case study narrative only be revealed in stages, so that students are required to discuss potential outcomes for the next step. Thus, I recommend an inductive process of learning which asks students to gather the information at hand, critically analyze possible solutions, and work in teams to identify the course of action at several critical stages in the narrative (case study). The students can then compare and contrast their discussion with the actual outcomes of the case study at each stage. In doing so, they are also
- constructing their own case study which includes alternative narrative strands and outcomes. This process encourages groups to simulate the work of global project teams.
- 4) **Identify a case that includes intercultural and/or linguistic challenges.** As part of the framework for the case study, include activities that will also focus on the extent to which language and culture were factors in the success or failure of the project. Introduce the competencies for global project teams (indicated above) and provide a compact overview of several theories of intercultural communication, as well as examples of their application, as part of the students' tool kit.
- 5) **Provide visuals that support or challenge the case study text.** Throughout the case study process, include visual markers to provide context, stimulate discussion, and supply additional information that may be missing in the text. Examples: An advertisement (e.g., in print or from video sources on the web) for a product or service can stimulate an initial discussion of how successful the product might be in a different cultural context. A photo or video clip of a particular situation involving human interaction with a product/service or showing the location of a factory or retail site can be used for brainstorming potential challenges (e.g., infrastructure) by using the competencies for global project management above.
- 6) **Use activities that engage students in the process.** At each stage of the case study, consider the selective use of brainstorming, information gathering, role-plays, or simulation activities. Role-plays are well-suited to developing skills for global project teams. For example, each student is asked to assume a different role or perspective in the team, present that perspective, and then critically reflect upon the action or position taken by the participant whose role they assumed. Students may also be asked (individually or in teams) to conduct short follow-up research assignments that will assist them in problem-solving activities from one class session to the next. These short assignments are also part of the daily information-gathering and analysis activities required of project managers.

- 7) **Include activities that ask students to reflect on the dynamics of project teams and group interactions.** What information does the case study include regarding the participants in a project or situation? What do we know about the participants' roles in their organization? What information is missing? (See role-plays above.)
- 8) **Provide opportunities for ongoing assessment (both formative and summative) throughout the case-study process and post-case.** Determine how you would like to measure student learning and consider both discrete (micro) and holistic (macro) assessments. Identify 3-4 measureable outcomes for the case project, which could be based on the global project management competencies above. Examples might include some of the following: 1) Students identify 2-3 linguistic and/or cultural factors that contributed to communication challenges on a project and may have also impacted other aspects of the project (e.g. product design, production, marketing, quality control). The results are discussed in small groups with peer feedback and an instructor evaluation. 2) Students collect the alternative courses of action that their team (or the class) proposed at critical junctures in the case study and then compare them with the intended or actual outcomes at the end of the case study process. 3) Students rewrite the case study in a different cultural and linguistic context, but with all the other factors remaining the same. What might change with respect to the interaction of the participants and the possible outcomes? How do the dimensions of global project management above become variables in a different cultural context (e.g., project environment and infrastructure, team organization and development, communication, acceptable levels of "risk")? 4) Students apply the dimensions of global project management (as appropriate to the specific case), in order to rate the effectiveness of the project they are discussing (e.g., using a Likert scale rating).<sup>7</sup>

## USING TRANSDISCIPLINARY CASE STUDIES

This section will present several examples of transdisciplinary case studies and provide specifics regarding the frameworks for design, implementation, and assessment. As noted above, prior to beginning the series of case studies that I

use throughout the semester as a supplement to course texts, I believe it is critical to provide students with background information on the nexus of global project teams and intercultural communication, as well as some tools for exploring these challenges.

## BACKGROUND PREPARATION: FORCES OF GLOBALIZATION

During the first few weeks of the semester, we briefly touch on some of the *forces of globalization* that impact our daily lives and global professions, e.g., (uneven) distribution of natural resources, climate change, definitions of sustainability in different cultural contexts, virtual technologies (including social media), economics and politics (e.g., the EU and the Euro, China, the Middle East and "Arab Spring"), and notions of mobility and migration. Images or video clips are useful in providing a springboard for brainstorming global issues in small groups followed by class discussions. Students are increasingly interested in sustainability and "green resources", and usually have perspectives or experiences that they can share with the class. For example, some students may have collaborated in projects through *Engineers for a Sustainable World (ESW)* or *Engineers Without Borders (EWB)*. Students who have participated in study abroad, internships, service-learning projects or had an interesting or challenging international experience (personal or professional) can be encouraged to share their experience with the class or in small groups. Thus, these activities can be pitched to a wide-range of students, including those from a variety of disciplines and at various stages in their academic career. The object is not to treat these issues in depth, but rather raise awareness of the complex forces of globalization. These discussions provide a good context for briefly touching on various notions or definitions of globalization, e.g., "global flows" or "glocalization" that can assume very different inflections and meanings depending on the cultural context.<sup>8</sup>

The discussion of globalization is a good segue to a discussion of the *challenges of working on global project teams*. I ask students, working in small groups, to identify five factors that might contribute to the success of a global project team, e.g., one including members from China, Germany, India, Spain, and the US. I then share the results of the survey of project managers in a bulleted list and ask the groups to rank-order them in terms of

importance and provide an example of a specific challenge for each item (see above, Hoffmann 13-14). The discussion of the challenges presents a good transition to the list of *dimensions of global project management* presented above. As an assignment, students may be asked to brainstorm an example of how a particular dimension of global project management (e.g., infrastructure, risk, or conflict management) might be impacted by a different cultural context.

## **BACKGROUND PREPARATION: CORPORATE MODELS**

I also provide diagrams that represent four basic *models of organizational development* and reflect stages of increasing corporate complexity and maturity: international, multinational, global, and transnational (Walter 8).<sup>9</sup> Students are asked to identify which organizational model best matches the corresponding diagram. The class compares the strengths/weaknesses of each model (e.g., degree of localization, coordination of a global strategy). I have found this activity to be a useful tool in addressing how corporations and their project teams address more global strategies and how the selection of a particular organizational model may contribute to the success or failure of a project.

For example, the more traditional *international* model has highly centralized decision-making, i.e., corporate headquarters implements a strategy uniformly in other countries without extensive input or feedback from local decision-makers, whereas multinational corporations may have a high degree of localization, but may place less emphasis on an overarching global coordination. *Multinational* corporations usually emerge as a result of local acquisitions and joint ventures and they maintain a high level of local autonomy. Leadership positions (e.g., the managing directors) are usually held by local nationals rather than expats. *Global* corporations depend on local subsidiaries and joint ventures to develop and contribute to the global coordination of projects. They have a high level of coordination and standardization for many corporate functions (e.g., manufacturing and sourcing processes). *Transnational* models reflect a negotiation of global and local demands and markets; they are frequently the most complex and differentiated of all four models. Transnationals may maintain global or centralized coordination for some functions (e.g., customer-service call centers) but allow each region or country to develop its own

processes and structures that are best suited to that region or site of operations, be it a factory, distribution center, or sales facility. Transnationals also reflect region-specific joint ventures that emerge through common objectives, processes, or access to raw materials. As the prefix “trans-” indicates, these complex organizations are adept at working across regions – maximizing global *and* local efficiencies while maintaining a high level of local orientation. As Walter points out, organizations frequently evolve from the less complex international model to multinational, global, or transnational corporations that employ strategies and processes of all three models and stages of development depending on market demands, location, or products and services (8-11).

## **BACKGROUND PREPARATION: FRAMEWORKS FOR INTERCULTURAL COMMUNICATION**

The last step, before introducing the case study, is a brief *overview of some of the theoretical frameworks for intercultural communication and/or global competency*.<sup>10</sup> Regardless of the model(s) selected, I suggest a short introduction to at least one theoretical framework for intercultural communication, including some everyday examples (which can be reinforced with images and video-clips) at the beginning of the semester. The theoretical framework can become a touchstone or reference point throughout the semester as more in-depth discussions emerge within the context of the case studies. One example of a compact theoretical model is provided by Edgar Schein who identifies three levels of culture: 1) behaviors and the results of behaviors that are visible but require interpretation and context (e.g., languages, rituals, clothing); 2) values and norms that are partially visible and partially invisible (e.g., ideologies, (un)acceptable behavioral practices; forbidden behaviors); 3) cultural assumptions about everyday life; social contexts and human interactions that are invisible and largely unconscious (2-15). Students brainstorm examples for each level and discuss their impact on everyday interactions. I then ask them to analyze some examples and images in a particular context (e.g., forms of non-verbal communication in a professional setting). Instructors may also wish to use structured assessment tools at the beginning of the semester to gain a better sense of student awareness of intercultural competency, e.g., by including a mini-case study.<sup>11</sup>

By introducing the preceding analytical tools at the beginning of the semester, subsequent analyses of the case studies that ask students to produce their own case studies can be more productive and innovative. As noted above, there are numerous models for creating effective case studies. I will discuss several examples that may be useful for focusing on the nexus of global project management and intercultural communication.

## MINI-CASE STUDIES

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The French-German case study at the beginning of this article provides an example of how a short scenario can be used to introduce the multiple challenges of global project management. This mini-case study focuses on the intercultural and linguistic challenges of projects by using the following activities:

- 1) Students read the case study in class (and clarify vocabulary in the text if the course is conducted in a world (foreign) language).
- 2) Small groups identify what they consider to be crucial facts or pivotal events in the case.
- 3) Role play: Students are divided into groups of three and the instructor assigns a role to each student: one student is a member of the French team; one student is a member of the German team; one student is a neutral observer (or supervisor from another corporate division). The French and German members are asked to summarize what happened during the two meetings from their respective perspectives. The observer must ask questions to gain additional information. The instructor may ask some of the French and German team members to summarize their perspectives (and these can be noted on a screen or board). The neutral observers are also asked to summarize their observations and discuss the dynamics of the group interaction. The groups are then asked to formulate at least three suggestions on next steps and how the problems might be resolved.
- 4) The whole class discusses the results of the group discussion and compares various responses to the problem identified.
- 5) A follow-up discussion to the role-play at the end of class can provide the opportunity to elaborate on linguistic, historical, and cultural issues. The following examples illustrate additional activities that establish greater context:
  - a) In this case study, the respective teams were charged with developing a “concept” for a joint venture. How did the word “concept” assume differing meanings and implications in French and German? While the French perceived the charge to develop a concept as a point of departure for brainstorming and creative discussion, the Germans perceived it more concretely as both an idea and a “concept paper” which they developed. The Germans assumed that they should be thoroughly prepared for the meeting and did not perceive their proposal for the product concept as controlling or dominating.
  - b) The class discussion could also focus on how the dynamics of the discussions escalated in terms of the respective responses to cultural assumptions by examining or speculating on the use of language and discursive analyses. For example, how do the French team members respond when the German discussion leader admonishes them to stay on topic? Why do they simply say “yes” when they are angry? Why don’t the Germans understand that this is ironic? In addition, what information do we not know, e.g., what was the language used for the meetings (French, German, and/or English)? How might the selection of a language shift the perceptions of power/authority in the team dynamic?
  - c) I also show images of French and German politicians or negotiators using body language to emphasize or reinforce a point or question. Students respond to the images of typical non-verbal communication by observing that the case study does not provide the complete context for drawing conclusions. This is an important point in their analyses, as it underscores the fact that project managers or team members must frequently work with limited information, often at a distance, or receive reports second- or third-hand, rather than face-to-face.

- d) While many US students may consider cultural differences within Western Europe to be relatively insignificant, the case study provides the opportunity to illustrate more subtle linguistic and cultural differences that are not visible to the casual observer. I show a map of France and Germany and ask students to share any knowledge they might have regarding relations between the two countries and their histories.
- 6) At this point, the instructor can provide additional information regarding intercultural communication, including the following: a) preconceived cultural assumptions may be reinforced through context-specific behaviors and group dynamics based on linguistic miscommunication; b) assumptions and stereotypes are confirmed in the minds of the participants and subsequently lead to a downward spiral of mistrust; c) the French and German participants brought their own collective and individual assumptions regarding the “rules of the game”, “rules of engagement”, or agenda which were not communicated to the other group, i.e., there was no consensus regarding the specific agenda and expected outcomes prior to the meeting (Hoffmann 15-18).
- 7) As a final step, students may be asked to apply some of the dimensions for developing global projects to this case. Based on their knowledge of the case, they should identify the key areas necessary to move this project forward. How could each team *productively* engage what they perceive to be weaknesses on the part of the other team, e.g., a willingness to brainstorm or the need for a clear agenda? As noted above, it is important to underscore that there is much that we do not know about what actually happened in this case and that this may reflect reality for global project managers who need to find out what may be motivating or driving their team members and must do so quickly and with limited information.

The case study also illustrates that cultural boundaries need to be problematized or considered more porous in order to avoid reinforcing stereotypes of uniform behaviors on the part of either team or within teams that may be characterized by diversity and internal conflicts *within a culture*, not only across cultures. Similar case studies can provide the opportunity to

illustrate cultural differences that may not be apparent without more intensive engagement in the culture, e.g., “most Europeans would behave in the following way...” As a follow-up assessment, students might be asked to speculate what might change if the same situation involved two other cultures, e.g., a US and Japanese joint venture. Small groups could rewrite the study with two other cultures using several readily-available scales or dimensions of cultural differentiation,<sup>12</sup> by gathering information from professional journals dealing with intercultural communication, or by conducting interviews (e.g., with international graduate students or faculty) from the target culture. The format can be adapted to make the activities longer or shorter. I usually budget 2-3 days for this mini-case study.

### **Transdisciplinary Studies: Entrepreneurship – What went right?**

Many case studies examine instances of unsuccessful projects and ask students to identify the problem, analyze what went wrong, and then develop alternative solutions. Case studies in entrepreneurship or entrepreneurial ventures may provide an opportunity to introduce students to the transdisciplinary field of entrepreneurship by exploring what went right, or what Barry Shore identifies as “Critical Success Factors”, and to become more familiar with entrepreneurship in diverse cultural contexts (5-16). Entrepreneurship courses and experiential learning opportunities (including incubators for student projects) are now available at many universities and provide a good opportunity to link teaching, experiential learning, and practice.<sup>13</sup> Entrepreneurial approaches and skills can also be integrated into a wide range of courses and curricula.<sup>14</sup> Moreover, some research suggests that study abroad programs that include entrepreneurship modules linked to experiential learning (including field work, “hands-on” experiences, internships, or service learning) may foster entrepreneurial awareness and skills.<sup>15</sup> Many of the characteristics of successful global engineers (e.g., recognizing opportunities, flexibility, developing a plan in a different cultural context and implementing it, willingness to travel and work in new, challenging environments, global agility)<sup>16</sup> also align closely with entrepreneurial skills<sup>16</sup> and map onto the dimensions and activities associated with global projects (see above). Moreover, many engineers launch their own companies after several years of experience with a global corporation and post-graduate study, e.g., in

a joint MBA-Engineering program. The rapidly-changing demands of a global marketplace require engineering students to become increasingly entrepreneurial in their approaches and outlook. I would therefore argue that exposure to entrepreneurship and the development of a skill set for entrepreneurial engagement are essential components of training future engineers and global project managers.

At my own institution, we received a grant to develop entrepreneurship modules in each of our "Business and Professions" courses in Chinese, French, German, Russian, and Spanish. As with other case studies, I was interested in identifying a narrative that had a strong cultural component and I found several articles on a popular new product, Bionade, a non-alcoholic beverage with all natural contents, developed by a small brewery in Germany that was on the brink of bankruptcy. The case not only presented the challenges of producing (manufacturing) a new product, but also acquiring venture capital, and launching a new product. It also included dimensions that cut across business, engineering, agriculture, food science, and cultural studies. I divided the case study into three parts in order to engage the students in the specifics of the case and introduce them to the broader issues of entrepreneurship, including: 1) Part I: What Is Bionade?; 2) Part II: What Is Entrepreneurship? 3) Part III: Entrepreneurship in Germany and in a Global Context. In order to vary the pace of the class, I allocated at least half of the class period (roughly 25-30 minutes) each day to the case study (meeting three days each week) for approximately three weeks during the semester.

## PART I: WHAT IS BIONADE?

The design of the case study followed an inductive approach, similar to the frameworks described above, and using the following activities and tools:

- 1) *Introduction:* A brief narrative provides an introduction to the location of a family-operated brewery in a small town (Ostheim) in south-central Germany – a region with limited tourism.<sup>17</sup> The case narrative explains that the family brewery is close to bankruptcy, in part due to the growth of larger competitors in Germany and the EU. A photo of the countryside provides a visual anchor to the text and students are asked to describe the scenery and consider the pros and cons of operating a small business (e.g., supply chain, transportation, logistics) from that type of region. An image of brewery production equipment (available from websites such as Google or Flickr) could also be used to augment the photo and provide more details regarding production facilities as well as basic vocabulary related to the manufacturing aspects of bottling and beverage production.
- 2) *Collecting Information and Brainstorming:* A short quote from a family member describes the financial state of the brewery. Students are asked to work in small groups to identify the key facts in the case and *brainstorm* what factors may have led to the precarious state of the business. Students quickly conclude that the competition with larger breweries operating in Germany and globally could be an important factor. Many suggest that the brewery should develop a more aggressive marketing strategy, including the use of social media to reach more customers outside the region. I also ask them to think about trends in alcohol consumption in Germany and we look at some statistical data showing that the consumption of beer among younger Germans has been in steady decline. Other factors mentioned by students include the relative efficiency of the production facility and the need to develop new brands or types of beer.
- 3) *Role Play:* During the next class meeting, students participate in a role play involving three key family members who operate the small brewery. Students are divided into groups of three and the instructor assigns a role to each student: the managing director of the brewery; the husband of the managing director who is the master brewer; the son of the managing director from a former marriage who would like to become more involved in the business. Each family member is asked to bring 2-3 suggestions for the future of the business. Then the family group discusses the suggestions, agrees on one or two options, and justifies their response. The groups then report back to the class and the pros and cons of the suggestions are weighed by the class. The results can be summarized on a screen or a board. Students may also be asked to assess the relative strengths and weaknesses of the various members of the management team and their suggestions using a SWOT (strengths, weaknesses, opportunities, threats) analysis. What can the respective members of the team

contribute to strengthen the business? What expertise might be lacking in the management team?

- 4) *Product Innovation*: Following the role play, I share additional information with the students. The family decided not to sell or liquidate the holdings of the brewery, despite the critical financial state of the business. I then present some information regarding the next chapter in the story. Here, the students learn that the master brewer has been experimenting for years on a new refreshing beverage with all natural, biological ingredients, and has developed a new drink called Bionade. The name combines the reference to *biological* ingredients (i.e., no chemical additives) with the German word “Limonade” which is the generic designation for flavored sodas or colas. The master brewer obtained two patents for the new beverage and a market research firm provided a report indicating good chances for the new product.
- 5) *Product Introduction*: Students work in small groups to brainstorm how Bionade could be introduced to the marketplace. Again, the results of the brainstorming are reported back to the class and discussed. Students frequently mention advertising and promotion in print and social media, distributing free samples at events (outside soccer arenas or at music events), or attending trade fairs. Students could be asked to use a SWOT analysis to identify the relative merits of various proposals. The class can consider the linguistic associations of the name “Bionade” and how it might be perceived by potential consumers, including distributors.
- 6) *Business Plan*: At this point, the instructor can also ask students to identify key components of the business plan that may be missing before the company can proceed with introducing the new product. (It is useful to provide a generic overview of typical elements included in a business plan.) While the brewery had received positive feedback from the market research firm (see above), when it approached major breweries with the option of licensing the product, they were met with rejection.
- 7) *Challenges*: I present three major challenges that the brewery faced as they introduced the

product, and that may have been missing in their business plan:

- a) *Branding/Identity/Marketing*: Bionade was an unknown product and brand. How could the company explain to supermarket chains and consumers what it is? How could they develop distribution channels?
  - b) *Credit/Venture Capital*: The brewery was under-capitalized. How could the company finance the production and distribution of a new product without credit or capital? (Banks were unwilling to grant credit to a company that was already close to bankruptcy.)
  - c) *Bureaucracy*: Because Bionade did not easily fit into a known product category (i.e., it was neither a soda/cola nor an alcoholic beverage), the government was not sure what type of labeling would be required. This also became a problem when the brewery made plans to produce Bionade in the USA (Weiguny 220).
- 8) *Meeting the Challenges*: After sharing these challenges and some additional questions with the class, there are two potential options:
    - a) the class can be divided into project teams (3-4 students each) with the objective of addressing these challenges; the students are asked which dimensions of global project management (see above) may be important, how they intend to create their team, and address the challenges; each team must address all three challenges (see above);
    - b) the instructor divides the class into groups (3-4 students each) and assigns one challenge to each team (see above).

Regardless of which option is selected, the instructor may ask the teams to act as consultants to the brewery by gathering additional information using the web (e.g., regarding production and marketing in the beverage industry, financing new products, and legal aspects of trademark and copyright). The research need not be lengthy or in-depth. The consulting teams should list other challenges that they anticipate. The teams report back and can again apply a simple SWOT analysis or

other instrument as indicated above. Each consulting team analyzes the situation, gathers information, and presents possible courses of action.

- 9) *Success*: I share the final information in the Bionade case narrative. There were a series of successes, including breakthroughs in distribution (a major supermarket chain carries the product and another beverage producer provides shipping and logistics throughout Germany) and increasing popularity as a beverage in trend cafes and bars. Because Bionade is sold in beer bottles with bold colors, it fits well in both cafe and bar culture, but it is also attractive to younger consumers who desire a non-alcoholic, natural alternative (flavors include elderberry, ginger-orange, lychee, and herbs). In this context it is useful to point out that Bionade was not only a non-alcoholic alternative to beer, but was also a *non-alcoholic beer* that would appeal to consumers who were driving or who were simply seeking a healthy and tasty “beer-like beverage.” Thus it was also well positioned with respect to the growing market for flavored beers. I also discuss the annual sales figures with students and we view a video (or video clips) from YouTube on the background and marketing of Bionade, including its expansion to other EU markets and an analysis of advertisements and promotions at trade fairs.
- 10) *Challenges of Global Expansion*: Students may be asked to speculate on the particular challenges of introducing the beverage into different cultural contexts in the EU and abroad. Which countries or regions might be the best prospects for market expansion? The “culture” of the Bionade brand in Germany is also a key factor to discuss in terms of whether and how it might be “exportable” or adapted to other countries. What might an advertising or marketing campaign in that country look like?

This discussion might also include feedback on consumer trends toward natural foods and sustainable food production, which provides an opportunity to return to the cultural contexts of sustainability and globalization. Are sustainable agriculture and “green issues” common themes that resonate with younger consumers in many countries, i.e., part of a global marketing strategy? In this regard, Bionade also sponsors domestic and international projects involving the environment,

bio-agriculture, sports, health, and youth. Students could examine the extent to which these sponsorships are effective and/or appropriate. Current information can be added by the students or instructor from the Bionade website.

Bettina Weiguny’s book, *Bionade*, provides interesting background information on the brewery’s efforts to export to Australia and Japan, and launch a production facility in Iowa – through a joint venture with Alb-Gold (a German noodle manufacturer) and the farmers of the Amana Society in Iowa (216-26). If time permits, a brief discussion of the “Adventure in America”, as Weiguny characterizes it, presents an instructive case study within the larger case study which crystallizes some of the challenges of entry into a foreign market. First, Bionade selected a sales manager for the USA who had extensive experience with the successful energy drink Red Bull in South America however visa issues in the US delayed the manager’s start date for over a year, i.e., impacting sales plans. Students could be asked to weigh the pros and cons of using expats vs. local experts for a new venture abroad. What role would knowledge of local language and culture play for the sales manager? Second, the brewery had difficulty obtaining permission to produce Bionade in the USA since it was considered a fermented beverage, but was non-alcoholic. Should the brewery have anticipated this challenge in advance, e.g., by using local consultants familiar with US food and beverage regulations? Third, the production facility was being financed by the Amana Society farmers who provided the land and capital for the plant, which would be leased to Alb-Gold and Bionade (with subsequent repayment of the principal with interest) (Weiguny 225-26). All of these plans for the US production converged during the period 2006-2008. Students could be asked what happened to global financial markets in 2008 and how this might have impacted the plans for a US production facility. As Weiguny points out, after 2008 Bionade had to put its ambitious US venture on hold, although it claimed to have support from the Amana Society farmers to proceed (225-26). The brewery continued with the export of Bionade, waiting for market conditions to improve, and assessing the demand for the beverage in the USA. All of these factors illustrate the complexity of entering a foreign market and the necessity of recognizing and implementing a diverse set of strategies, particularly when confronted with unexpected developments like the 2008 financial crisis. This discussion also underscores the

transdisciplinary dimensions of entrepreneurship, particularly for engineers who develop their own entrepreneurial ventures or who serve as project managers. At this point it is worth repeating that core engineering skills are a prerequisite for all successful engineers (e.g., the ability to manage a production facility), however a good knowledge of financial, legal, and logistical dimensions are essential elements for the successful engineer-entrepreneur, as well as global agility – facilitated through experience with multiple languages and cultures.

## **PART II: WHAT IS ENTREPRENEURSHIP?**

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11) Based on the Bionade case study, I ask the student groups to examine the “ingredients” that contributed to a successful new product using some of the advertisements and videos as a point of departure. The groups are asked to respond to three questions:

- a) What factors contributed to the success of Bionade?
- b) What might have the company done differently in order to ensure the success of their product? (Here students can refer to the results of their group discussions and compare the outcomes with the information they receive from the instructor and in video or print.)
- c) What steps must the company take in order to ensure its future success in Germany, the EU, and/or abroad?

This discussion provides a good opportunity to summarize the “lessons learned” from this case study, including the importance of developing a business plan, conducting market research, identifying sources of capital, and working with business partners. Engineering students may also contribute suggestions on any factors that might impact production (e.g., brewing and bottling operations). This discussion can also include how these activities map onto the dimensions of global project management above (e.g., team leadership, risk management, supply-chain management).

12) As a result of the case study, the groups are then asked to develop a definition of entrepreneurship and list 5-6 factors that are key to entrepreneurial activity. In addition, they

are asked to list examples of entrepreneurs or entrepreneurial companies from several countries. This discussion provides the opportunity to discuss the breadth of what it means to be entrepreneurial in many different cultural contexts and branches of industry and to define the characteristics of entrepreneurship. I provide a list of characteristics and companies and challenge students to explain why/how they are entrepreneurial. A follow-up assignment and assessment may include a reflective essay in which students are asked to share an important opportunity in their lives and discuss it in terms of the entrepreneurial categories (e.g., level of risk, planning required to realize the opportunity, use of external resources (friends, family), degree of success, lessons learned). This activity fosters students’ skills in analysis, reflection, and self-assessment. That is, students start to build their own personal and professional case studies which can be used as part of a larger assessment plan or portfolio including student projects and internship experiences.

## **PART III: GLOBAL ENTREPRENEURSHIP**

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13) The case study project concludes with a brief overview of trends and data regarding global entrepreneurship. I begin with the context of Germany, the home of Bionade, and ask the students to speculate regarding the level of entrepreneurship in Germany in comparison with the US or other countries. Are there particular barriers as well as unique opportunities with respect to the German context? I utilize a range of German-language textbooks and articles on entrepreneurship to provide a more nuanced picture, including several companies from German-speaking countries. I highlight some interesting trends in Germany including: the historical success of family-owned businesses that are now facing new challenges, the impact of new small businesses started by Germany’s multicultural population during the past two decades, Germany’s leadership and success in the manufacturing of high-quality products, and the geo-political position of Germany in Europe as a desirable site for business operations.<sup>18</sup> Many of these topics may be linked to preceding discussions of global project management. Bionade is one example of how instructors can adapt the frameworks and

activities described in each of the steps above to similar case studies that integrate entrepreneurship and global project management.

## **CASE STUDIES FROM THE FIELD: GUEST SPEAKERS**

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Presentations by guest speakers can be a very engaging resource for students. Experts from the field provide practical experience dealing with everyday challenges of working in global project teams. Alumni and corporate partners represent a good source of potential and enthusiastic speakers. In a course dealing with technology, globalization, and culture that I co-teach with a colleague in engineering, we have had great success with guest speakers who share their wealth of experience with students – ranging from corporate CEOs to project managers, and cross-cultural consultants.<sup>19</sup>

Brief case studies by guest speakers provide concrete examples of global project management that frequently challenge students' assumptions about living and working in another culture. For example, one speaker highlighted infrastructure challenges while working on a project in Saudi Arabia. The company learned that it had to transport all of its equipment to the job site since it was not possible to "run out to the local Radio Shack" if a co-worker forgot a basic tool. But beyond basic infrastructure issues, students also learn about the complexities of communicating across cultures. In the presentation provided by this corporate executive, the project team also had to learn how to work with interpreters on the job site in order to meet deadlines and communicate changes or modifications. Moreover, the US employees had to adjust to the climate of the Middle East, which was a big change from the Midwest. This same speaker also shared information regarding currency fluctuations when developing global projects. These topics – ranging from local infrastructure to global finance, and language and culture – stimulated a lively discussion and many questions.

During each presentation, we ask students to write several thought-provoking questions that we collect at the end of each class. We select some of the best questions as a basis for online, threaded discussions on a particular topic. The students are then assessed based on the quality of their contributions to the online discussion.

An integral part of the class is a team project that identifies and analyzes a challenge of globalization. For the project, we create teams of five students including one or two off-campus students who are enrolled in distance education online. We believe that the combination of on-campus and distance education students, most of whom are practicing engineers pursuing an advanced degree in engineering, provides a good opportunity for students to develop some of the interpersonal and management skills required for effective global project management. For example, team leaders frequently comment in their course evaluations that convening their team across several time zones can be challenging.

## **CASE STUDIES: INTERNSHIPS, SERVICE LEARNING, AND RESEARCH PROJECTS**

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Case studies can also be an effective tool in preparing students for a range of experiential learning opportunities. These might include internships, study abroad, or faculty-led international development projects in collaboration with student groups such as Engineers Without Borders (EWB) or Engineers for a Sustainable World (ESW) – all of which can contribute to the skill set and competencies required for global project management. In addition to using a case study to raise awareness of the barriers and challenges of global projects, and living and working in another culture, case studies can also be used post-internship as one form of assessment. For example, students may develop a case study based on their own experience, using a streamlined version of the frameworks outlined above. As part of an internship or service-learning contract, students would agree to develop a case study (as one possibility selected from a menu of options). By planning the case study prior to their internship, students have time to collect the necessary information or data required for their case study project. Their on-site activities might include interviews with their supervisor or colleagues during or post-project, an analysis of the outcomes of the internship project, a journal which reflects on professional and cultural differences in everyday life, or information they might gather from the media or resources in the target culture. For service learning projects, students may complete pre- and post-project surveys, maintain a journal (recording project activities and their own impressions), and/or conduct interviews with their local clients, all of which could form the basis for a

case study including outcomes, analysis, reflection, and alternative paths for future projects.

Similar projects can also be designed for students who are engaged in collaborative research projects in labs, e.g., through the German Academic Exchange Service (DAAD) Research Internships in Science and Engineering (RISE) Program.<sup>20</sup> Case studies provide an opportunity to reflect on different research methodologies or approaches that may be used in diverse cultural contexts. In addition, many universities now offer courses based on global project teams, conducted virtually, that challenge students to analyze different approaches to the same problem, e.g., designing a solution to an environmental challenge. Collaborative projects with students at universities outside the US heighten student awareness of cultural differences in conceptualizing product design, implementation, and applications in the field.<sup>21</sup> For example, one of the key issues in quality assurance and customer satisfaction is the ability of sales or service representatives to explain the correct application or use of a product or technology, which may be impeded by inadequate translations. Students' experience gained from working and living abroad provides the "raw material" for designing their own case study, which may ultimately assist them in more effectively articulating what they have learned from an internship or international experience in their resumes, portfolios, or in an interview with a prospective employer.

## DISCUSSION/SUMMARY: TRADING PLACES?

In arguing for a transdisciplinary approach to educating engineers with a global skill set, I am also reflecting discussions and recommendations of leaders in international engineering education including John Grandin (Director Emeritus of the International Engineering Program, University of Rhode Island) and James Duderstadt (President Emeritus and University Professor of Science and Engineering, University of Michigan), who call for an interdisciplinary, global scope of education for all our students (Grandin 178). That is, we need engineers who have a solid education in the liberal arts and sciences *and* liberal arts and science students (as well as students in professions such as business, education, architecture, law, and medicine) who have a good understanding of, and skills in, science and technology. In an editorial

titled "Engineering Design: A Foundation for a 21st Century Renaissance" Duderstadt concludes that:

The professions that dominated the late 20th century were those that managed knowledge and wealth, professions such as law, business, and politics. Today, our world is increasingly valuing those activities that actually create new knowledge and wealth, professions such as art, music, architecture, and engineering in what could become a renaissance in the 21st century. After all, the tools of creation are expanding rapidly in both scope and power, to generating new knowledge. (n. pag.)

I am reminded of my own experience in co-teaching a course on technology, globalization, and culture (see above). When the course began, students perceived that my colleague in engineering and I would remain in our respective disciplinary "roles" or identities throughout the course, i.e., I would be the "culture expert" and my colleague would be the "tech expert." However, during the course of the semester, students learned that my colleague and I were interested, engaged, and knowledgeable about a wide range of topics, as we posed questions on technology, culture, society, and public policy to the class members and to our guest speakers. As our speakers encouraged students to work outside their "comfort zone", they learned the importance of expanding their knowledge and experiential base into new areas. After teaching the course for a number of years with two colleagues in engineering, I sometimes thought that we were gradually trading places. For example, I discuss the cultural impact of automotive engineering in Germany and the USA and my engineering colleagues often underscore the importance of understanding international politics and culture – not only in order to become a successful engineer but also to become better prepared for leadership positions in their future professional assignments. I believe this experience was a good thing for us as faculty leaders of the course and for the students. We have also been fortunate to have the assistance of excellent graduate teaching assistants in engineering and the humanities who provided students with feedback on their essays and online discussion threads. The course interactions also provided these graduate students with some new insights for their own research and professional development – in a sense also trading places by exploring new disciplinary terrain.

The notion of “trading places” relates to broader issues of developing intercultural competence and, as Darla Deardorff observes, raises the issue of how individuals adapt to the “other”, be it another culture or a different professional perspective. To what extent do individuals adapt to one another without giving up their own identity? Deardorff suggests that “One solution to consider is that of finding “common ground” or a “third way” where both parties must adapt to a certain extent to the other and, in some cases, even creating a “third culture” to which both can subscribe” (268). I would suggest that this “third culture” is what may develop in global project teams that have to identify strategies that will enable the team members to communicate effectively and achieve their objectives. In referring to the research by Moosmüller and Schönhuth, Deardorff also raises the question of “what intercultural competence looks like at the organizational level, given the current Western preoccupation with intercultural competence primarily at the individual level” (268). Kramsch argues that notions of a “third place” in language and culture should be considered less in terms of a static notion of place or location that defines identities and more in terms of what individuals as “multilingual subjects” might bring to their articulation of culture and language:

Observing multi-linguals at playing with their different languages in everyday life showed me that it's not so much a question of place as it is a competence of a symbolic nature. It was a capacity or process that people were using to position themselves socially, culturally, and emotionally as subjects in conversations, etc. So I needed a concept that was more flexible and more fluid than the notion of place (Kramsch and Gerhards 75-76).

Certainly a heightened awareness of how individuals position themselves “socially, culturally, and emotionally” within the contexts of project teams is critical to effective communication and ultimately the success of the project. Although some corporations (e.g., IBM) utilize virtual environments such as Second Life in order to facilitate both large and small meetings (with some significant cost savings), projects in virtual space may also create additional “layers” that complicate notions of culture and identity, e.g., by using avatars that blend “real” and “virtual” identities and cultures.<sup>22</sup> In this sense, we might also ask to what degree the group dynamics of a “third culture”,

regardless of whether it is created through face-to-face and/or virtual interactions, simultaneously facilitate and challenge global project teams. Developing a skill set that will enable project managers to negotiate the complexities of creating a “third culture” would seem to be an essential component of project management for any global organization, as well as a critical area for preparing students for global professions.

I have argued that the dimensions of global project management presented in the studies by Hoffmann et al. can provide a framework for developing project management skills in diverse intercultural contexts through a case study approach – one that utilizes a variety of resources, including students’ own experience, in order to expand their cultural knowledge and develop a more nuanced approach to cultural difference. Drawing upon Kramsch’s notion of the “multilingual subject”, students may also discover that their own lived case studies that fuse professional and personal experiences can create a deeper understanding of living, working and moving across multiple languages and cultures. Thus, case studies that draw upon diverse resources and experiential “reports from the field” – including media, transdisciplinary research (theoretical and applied), experiences of instructors, guest speakers, and students – not only provide preparation for global internships, study/research abroad, or service learning projects they enable students to successfully transition from the world of academic study to the complex challenges of everyday life in a global profession. As students increasingly recognize the value of developing their own portfolio of resources, they also discover that this is an on-going process, i.e., one of life-long learning, in order to meet the complexities of working globally, but also one that can be personally and professionally rewarding.<sup>23</sup>

## REFERENCES

<sup>1</sup> This article will draw extensively from Hoffmann et al., *Internationales Projektmanagement [International Project Management]* which provides a good resource for the integration of intercultural competencies and tools for global project managers. Subsequent translations from this source are mine.

<sup>2</sup> While some books on global project management (in engineering or other professions) provide passing references to the “do’s and don’ts” of working across cultures, relatively few provide in-depth case studies with a strong intercultural component, including theoretical and applied approaches. With regard to the former see Atesmen 5. Although the theory and practice of intercultural communication may be more articulated in Hoffmann et al., Köster’s use of mini-case studies is also very useful as a class text (and as an English alternative to Hoffmann et al.). Above and beyond traditional case study approaches in a classroom setting, I argue that case studies can be employed productively in a wide range of experiential learning activities both inside and outside of the classroom, ranging from role plays to internships and service learning.

<sup>3</sup> For a wide range of assessment tools see Fantini 466-74.

<sup>4</sup> Wal-Mart’s failure in the German marketplace provides one such example.

<sup>5</sup> With regard to engineering within diverse national contexts see: Downey et al. 107-22.

<sup>6</sup> See table of contents in Hoffmann et al. XI – XVI. I have made a few minor modifications and clarifications to indicate how these competencies can be used both as a framework for case studies and also as learning goals.

<sup>7</sup> For additional information on assessments and student feedback in case studies see Köster. Also see information on assessing global competency in Fantini 456-76, Grandin and Hedderich 371-72. For a basic overview of tools and approaches relevant to the use of case studies, including examples relevant to engineering (e.g., in materials science) see Claire Davis and Elizabeth Wilcock, “Teaching Materials Using Case Studies,” *UK Centre for Materials Education*, n.d. Web. 15 June 2012.

<<http://www.materials.ac.uk/guides/casestudies.asp>>

<sup>8</sup> There is extensive literature available on globalization. (See for example Ritzer, G., ed., *The Blackwell Companion to Globalization*, Oxford: Blackwell, 2008.) As an introductory activity, I ask student teams to provide their own definition of globalization with a few examples of how it impacts their daily lives. The term “glocalization” is frequently attributed to sociologist Roland Robertson.

<sup>9</sup> Walter utilizes the models developed by Christopher Bartlett and Sumantra Goshal and applies them to international (global) projects. See: Christopher Bartlett and Sumantra Goshal, “Global Strategies for Multinational Corporations,” *businessmate.org* n.d., Web, 15 June 2012 <<http://www.businessmate.org/Article.php?ArtikelId=13>>.

<sup>10</sup> For a good overview see the articles in Deardorff, as well as Del Vitto, and Schulz and Tschirner for both macro-level studies as well as those relating to specific disciplines.

<sup>11</sup> See Fantini 466-74.

<sup>12</sup> The Peterson Cultural Style Indicator™ is a useful tool for examining characteristics across cultures.

<sup>13</sup> See the website of the United States Association for Small Business and Entrepreneurship (USASBE) for resources related to entrepreneurship. The annual USASBE conference includes some international components and presentations.

<sup>14</sup> Although entrepreneurship has frequently been associated with new business start-ups, a wide range of disciplines and professions utilize entrepreneurial skills. Successful entrepreneurs in engineering and other professions draw from diverse disciplines and experiences and entrepreneurial approaches, including social entrepreneurship (e.g., projects with non-governmental organizations).

<sup>15</sup> Research indicates that extended study abroad experiences can foster entrepreneurial skills, not only through coursework, but also through increased levels of self-confidence and calculated

risk-taking. See Gasta et al. 17-30. With regard to notions of “risk taking” see Grandin *Going the Extra Mile* 172.

<sup>16</sup> Morris provides an inventory of key terms identified with contemporary definitions of entrepreneurship, many of which are relevant to global project management and working across cultures, including: opportunity recognition, innovation, creative problem solving, mitigating risk, resource leveraging, managing change and uncertainty, and implementation of change. See Morris 11.

<sup>17</sup> Extensive information on “the Bionade story” is found in: Bettina Weiguny, *Bionade: Eine Limo verändert die Welt*.

<sup>18</sup> The history of German immigrants to the US or other countries also provides some interesting profiles on the role of transnational entrepreneurship. The project on *Immigrant Entrepreneurship: German American Business Biographies, 1720 to the Present*, under the general direction of Hartmut Berghoff and Uwe Spiekermann will include a five-volume work with immigrant entrepreneur biographies and analytical essays. The fifth volume, “From the Postwar Boom to Global Capitalism, 1945 to the Present”, may be a useful resource for course materials on German immigrant entrepreneurs. *Immigrant Entrepreneurship* may reveal how language, cultural production, and technologies are negotiated across cultures. One of the “key questions” investigated by the project involves transnationalism: “What kind of transfer of skills, capital, or knowledge took place between Germany and the United States? Was there a subgroup of “transnational entrepreneurs” with continuous and close connections to Germany?” See the Immigrant Entrepreneurship website at <<http://www.immigrantentrepreneurship.org>> and a brief overview of the project in *GHI (German Historical Institute) Bulletin Supplement 8 (2012): 71-76*.

<sup>19</sup> At Iowa State University, I have co-taught “Technology, Globalization, and Culture” (cross-

listed between the departments of Mechanical Engineering and World Languages and Cultures) with Prof. James Bernard and subsequently with Prof. James Oliver, both in the Department of Mechanical Engineering. I am indebted to both colleagues for the opportunity to collaborate with them on this course and for their enthusiasm for inclusion of cultural, political, and social dimensions of globalization in our selection of speakers, books, and topics.

<sup>20</sup> For additional information see the RISE website <<http://www.daad.de/rise/en/>>.

<sup>21</sup> For examples of virtual design teams, see projects at the Global Hub <<http://globalhub.org/>>.

<sup>22</sup> Corporations increasingly utilize virtual spaces such as Second Life as a medium and platform for global project management. For information on the challenges of using Second Life for global project teams and meetings at IBM see “digital\_nation: life on the virtual frontier – Interview with Françoise LeGoues” (Chief Technology Officer for IBM), *Frontline* PBS, Web and Television, 21 June 2012 <<http://www.pbs.org/wgbh/pages/frontline/digitalnation/interviews/legoues.html>>.

<sup>23</sup> Kramsch discusses “a view of place...not as a product but as a *process*” (Kramsch and Gerhards 75). In this vein, I argue that part of a student’s portfolio is the actual process of reflecting upon experiential learning such as the internship experience in and outside of the workplace that merges with living in another culture and speaking another language. The process of reflection and memory enables students to clarify the meaning of the personal and professional experience, in a sense, articulating and building their own case studies as a process of personal and professional reflection and engagement. Grandin’s case studies in *Going the Extra Mile* provide a good example of the critical reflection that occurs as part of this process and document student success as a result of a transdisciplinary skill set combined with experiential learning (164-78).

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