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FROM THE EDITORS

This issue of *Quarterly Review of Business Disciplines* begins with the research of Diane Bandow and Tish Matuszek, Troy University, into the development of midcareer adult learners, who already hold positions of responsibility and leadership, by utilizing integrated learning theories and student experiences. The study of Lisa Nottoli and Zachary Gutierrez, Texas Christian University, explores how organizations can utilize storytelling to combat global competition. The paper explains how customers can connect with a brand through five pathways in the customer journey model. Nanda Ganesan, California State University, Los Angeles, presents evidence which concludes that cloud-based notebooks can be used as a viable alternative to traditional Learning Management Systems (LMS), specifically Moodle or Canvas. Armin Roth and Wjatscheslav Baumung, Reutlingen University, Germany, have developed a compact sensor board with network components that enable decision makers to adapt their supply chain based on internal and external observations in the Management Cockpit.

Nhung Trinh Thi Trang, Widener University, Shiang-Lih Chen McCain, Colorado Mesa University, and Joy P. Dickerson, The Culinary Institute of America, join forces to study the satisfaction of customers in green vs. non-green hotels in Vietnam. The study offers insight into why hotels decide to go green and what is expected in order to achieve customer satisfaction.

Margaret A. Goralski, *Quinnipiac University,* Editor-in Chief
Charles A. Lubbers, *University of South Dakota,* Associate Editor

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DEVELOPING LEADERSHIP CAPABILITIES THROUGH APPLIED LEARNING

Diane Bandow, Troy University

Tish Matuszek, Troy University

ABSTRACT

Increasingly, adult students, including those with significant industry and/or military backgrounds, seek graduate degrees in business fields. Many of these midcareer adults already hold positions of responsibility and leadership, so they are more sophisticated and prepared than early university students. This paper describes teaching methods used in a graduate program that address the needs of experienced, working adults using multiple, integrated learning theories. Student experiences are integrated into the classroom to prepare students to return to their organizations to solve problems/present solutions in a consistent, well developed manner.

Keywords: graduate business education, integrated learning theories, applied learning

INTRODUCTION

The value of applied learning is undeniable. While 80% of employers believe that applied learning is important for college graduates, only 23% of employers believe that college graduates are prepared to do so (Employers value applied learning, 2015). However, applied learning often takes the form of learning from cases and reading about experiences and situations of other individuals in corporations. While these are informative and interesting, as well as an important part of classroom learning, the authors of this paper propose that applied learning is, ultimately, most effective when students apply their personal experiences to engage concepts and models from their educational programs. During the process of applying direct experience, students comprehend and analyze cases that describe specific, highly contextualized situations. Engagement, commitment, and meaning making on the part of students become key to knowledge transfer, motivation, and student comprehension.

A significant problem is the gap between academia and real-world practices has not been reduced (Cohen, 2007). Skipton and Furey (2017) lament the lack of advancement in critical thinking after four years of college in many business undergraduate students. They decry the use of management "theories" and propose that they are not truly theories but only a means of providing structure to knowledge which can assist in developing understanding for students. However, students believe theories can be applied to practice; consequently, they have really learned how to learn/apply doctrine instead (Skipton and Furey, 2017). Skipton and Furey (2017), instead, propose that schools of business in universities must focus more on engaging students in real world events that are situationally relevant to improve student learning.

Similarly, Muff (2010) questions the relevance of current business school curricula, where managers must work with collaborative solutions to solve complex problems in equally complex social environments. Muff (2010) emphasizes the need for experiential learning that must serve as the basis for reflection and critical thinking if we are to enable effective learning about management (Kolb, 1976).

As part of case analysis in graduate education, students often work with cases in situations that are not relevant to their current situations, and the authors of this paper suggest that engagement, commitment and meaning-making are lacking in this approach. Part of educators' responsibilities is to bridge the gap between academics and real-life for students. For adult learners who want to apply what has been learned immediately, it's difficult to do with the typical case study, because the case is often irrelevant to a student's career, organization, or industry. Generic theories do not address the individual eccentricities of each organization, and every organization is unique.

The purpose of this paper is to present teaching methods from courses in an online Master of Science in Management (MSM) Leadership program which use student experiences in varied industries, non-profits, and government as the basis for course projects. These assignments, along with student feedback, demonstrate the value of using students' realities to interpret and apply models from their own experiences, thereby enhancing how they understand leadership and work in their organizations.

This highly contextualized approach allows individuals to take leadership roles for resolving current organizational issues. This paper is grounded in a recommendation to integrate learning theories, specifically for graduate students, as an approach to enhance critical thinking, engagement, knowledge transfer, and commitment to learning.

Theories to be integrated include: Knowles' (1970, 1984) concepts of andragogy, Kolb's (1984) approach to experiential learning, Brookfield's (1986) reflection as part of self-directed approaches to learning, situated learning, Constructivism (i.e., Prandini, Isler & Barthelmess, 2012; Merriam & Caraffella, 1991) and 'knowledge workers' (McGowan, Reid, & Styger, 2018; Kantor, 2000; Drucker, 1999). Integration provides a cohesive framework of instructional design and implementation. Issues are identified, theory and instructional activities are presented, and these are followed by discussion and conclusions.

Literature Review

Economos (2014) suggests that graduate education needs to be improved and that teaching must become higher priority. However, there is a dearth of literature about educating graduate students, particularly focused on applied learning, case-based learning, and leadership. The preponderance of research literature available is focused around undergraduate learning (Benefer, 2007) and teaching in general.

When there is literature available, the Master of Business Administration (MBA) is usually the program that is addressed (Smith, 2007), which is presented as a management program. However, Smith (2007) proposes that a specialist approach, or "meta-management", requires a "...skilled and practical humanist able to offer meanings and value judgments on all levels" (p. 242). Smith proposes changes to graduate business curricula to accomplish this goal.

The authors of this paper agree with Smith (2007) and propose that submersion into a business situation which is already familiar to graduate students allows them to experience specific situations with a different perspective based on the models that are used in the program. Smith (2007) emphasized that understanding 'what it is and how to do it' provides a better management education program. Because academia and business have separated management from the mainstream of life through the use of theory and management 'jargon', we now must develop students who are able to integrate their knowledge back into the workplace.

Integrated Adult Learning

An integrated view of adult learning as presented by Yarborough (2018) proposed integrating the theories of Watson (behavior), Vygotsky (social development), Mezirow (1996) (critical reflection), and Dirkx (nurturing soul) as an effective way to support adult learners. As noted earlier, this paper takes a similar, but more extensive, approach by providing recommendations to integrate learning theories specifically for graduate students by identifying the intersectionality of concepts to include those proposed by Knowles (1970, 1984), Kolb (1984), Brookfield (1986), Mezirow (1996), Constructivism (Prandini, et al, 2012), Situated learning (Prandini, Isler & Barthelmess, 2012), and 'knowledge workers' (McGowan, Reid and Styger, 2018), which was a term that was first introduced by Peter Drucker (1967) and revisited by Kanter (1990; Knowledge Workers, 2000).

Andragogy

Knowles (1970, 1984) defined adult learners through five assumptions about adult learners. The assumptions later became known as the principles of adult learning and include: The learner 1) has an increasing level of self-responsibility for directing learning behavior, 2) has a body of experiential knowledge that is an essential resource for learning, 3) is ready to learn when the learner encounters new social or life roles, 4) wants to apply learning to new problems immediately, and 5) is motivated to learn by internal rather than external factors. Knowles, Holton, and Swanson (2012) added a sixth principle: The learner needs to know what, why, and how, further supported by Mews, (2020). The principles create a core framework for understanding adult learning rather than adult education, a distinction that is notably addressed by Knowles et al. (2012) Androgological assumptions include a need for pedagogy (Knowles, 1980), because pedagogy may be appropriate when the learner is 1) in a content area in which they have no experience and do not perceive a relationship, 2) have no internal drive to learn more, 3) or must sustain a certain level of understanding of the subject matter.

Kenner and Wienerman (2011) emphasize the need for applications of andragogy, because integration into the academic environment is a challenge for adult students. Some of these adults are returning veterans. Others have determined that additional education is necessary for career advancement. They have likely experienced success in nonacademic lives and are expecting to be successful as they turn to colleges/universities for additional education.

While there are critics of andragogy, there is no doubt about the differences that it seeks to address between adult learners and child learners. Adults have life experience (Mews, 2020) that continuously inform their learning decisions, many adults prefer autonomy and self-direction over a teacher-directed approach, and adult learners seek to solve problems to meet existential demands.

Self-directed learning

Merriam and Cafferella (1991) remind us that self-directed learning has developed as an important area of research. They explain that this form of study occurs when individuals take the initiative to plan, conduct and carry out their own learning activities without the help of others, to include evaluation. Although this process has been described as linear and one that mirrors a formal instructional process, other studies have demonstrated that numerous and various strategies are employed when adults learn on their own (Merriam & Cafferella, 1991).

Constructivism

Huang (2002) explains constructivism as learners who construct new knowledge and learn actively based on prior knowledge. As a theory of learning, constructivism posits that each individual perceives a different reality based on experiences, culture, and educational backgrounds. Constructivism interprets learning as an active, social, self-directed and constructive process.

Whereas specific knowledge may be challenging to transfer from one person to others, when students actively participate to generate knowledge, they also develop core competencies such as critical thinking, problem solving, and analysis. By using personal experiences and applying them to models, a "flipped approach", a more meaningful and useful approach to learning, arises. This supports motivation and increases engagement, as well as supporting self-directed learning, a requirement for many graduate studies.

For adult learners, moving into a graduate program is more demanding than earlier programs, and some students have doubts about their abilities. Stein, Wanstreet, & Calvin (2009) suggest that adults may not know how to construct knowledge in an online environment, and this can impact graduate education, because so many programs are offered online in a blended format which combines online and traditional face-to-face interactions.

Graduate learning, initially, allows adults to explore expectations and time management as well as self-direction and self-management, all important factors in successful graduate education. At the same time, this requires the need for responses and feedback (Espasa & Meneses, 2010); therefore, a facilitator plays multiple roles (Huang, 2002) such as mentor, coach, and provider of meaningful and timely feedback. Facilitating will include critical reflection in the process, because critical reflection promotes and includes critical thinking (Brookfield, 1986; Popper, (2005); Stein, Wanstreet & Calvin (2009).

Experiential Learning

Experiential learning, as proposed by Kolb (1984, 2015), proposes that learning is based on life events which include concrete experience to analyze and reflect what is practiced with ongoing experimentation. Kolb's (1984, 2015) work is grounded in the earlier works of Dewey (1938), Lewin and Gold (1999), and Piaget (1972) and is presented as an alternative to cognitive models of learning. He posits that experience, cognition, perception, and behavior, taken together, provide a holistic approach to learning. Experiential learning theory is a constructivist approach and contains six core propositions:

1) Learning is a process rather than an outcome.
2) All learning is relearning.
3) Learning requires resolution of conflict.
4) Learning is a holistic process of adaptation.
5) Learning is the result of synergetic transactions between person and environment.
6) Learning is the result of creating knowledge (Kolb & Kolb, 2005, p.194).

Brookfield (1986) emphasizes a self-directed approach to learning, as well, and notes the importance of experiential learning and critical reflection. Huang (2002) notes similarities in the constructivist approach with Knowles' concept of andragogy, as adults bring unique experiences and characteristics with them, thus allowing variances in the workplace to be a key element in experiential learning. Adults analyze past experiences and align these with theory and models in the context of the graduate program.

Situated Learning

Prandini et al. (2012) support situated learning as part of the constructivist learning environment which allows students to construct appropriate skills, knowledge, and attitudes to create sustainable environments. In situated learning, meaning is created from daily activities (Situated Learning, n.d.). This constructivist concept is represented by The Principles for Responsible Management Education (PRME). This includes, but is not limited to, content, outcomes, learning processes and a normative basis consisting of shared values and ongoing "metacognitive reflection" of the specific content (p. 18). Situated learning is encouraged as part of experiential learning. The authors identify a need for "greater use of experiential learning techniques - exposing people directly to the situation…" (Wilson, Lenssen & Hind, 2006, p. 37, as cited by Prandini, et al., 2012, p. 19-20). This provides a powerful learning experience as well as the opportunity to experiment and reflect.

Reflection

Brookfield (1995) includes reflection and reflective exercises as part of the constructivist approach, in which adult students analyze, identify and relate course concepts to personal experiences. Economos (2014) explains how graduate business student perceptions of reflection are met with skepticism, resulting in student disengagement, because they believe reflection is a waste of time and irrelevant. Professors believe reflected practices are a waste of time because of the lack of a direct connection to student outcomes.

However, the practice of reflection contributes to deep learning and is considered part of transformational teaching (Mezirow, 1996). Deep learning requires a significant, explicit connection between students and information (Economos, 2014). This happens when opportunities are provided for students to construct meaning using problem-solving skills that require connecting concepts. Deep learning also reflects internal motivation and desire to understand while developing independent thinking. Therefore, transitioning from a lecture-based learning system in favor of more learner-centered and collaborative approaches enhances student learning (Economos, 2014).

This transformational teaching approach provides a framework for students. This approach is also positively associated with increased student motivation and intellectual stimulation (Economos, 2014). Students who are engaged in the course and the learning activities proactively integrate and apply new knowledge.

Morgan, Rawlinson and Weaver (2006) suggest that the more time adults spend reflecting, the more they may recognize their own achievements, and this carries over to the workplace. Their research demonstrates that learners reflect more, manage their own learning more consistently, and recognize their achievements, all through increased levels of engagement.

Meaning Making

Meaning is a relationship between an event and the reaction of the individual to that event. Meaning making, the learning and teaching process, and the theory of meaning-making is attributed to Kegan (1998, as cited in Ignelzi, 2000). The three fundamental concepts regarding how meaning making occurs are 1) humans actively construct their own reality; 2) meaning-making develops over time and with experience; and 3) the process of learning and teaching is strongly influenced by the way participants make meaning (Kegan, 1998; Ignelzi, 2000, pp. 5-6). Meaning-making supplements learning theory, supporting the different approaches to learning theory by providing interpretations of existing knowledge, understanding, and sense-making in content areas to relate curriculum to daily activities in the workplace (Knowles, 1990).

Knowledge Management and Knowledge Workers

Kanter (2000) described knowledge workers as expecting increased autonomy, reliant on voluntary behavior, and at the forefront of a new style of work. Knowledge workers need conditions where they feel trusted and can use their knowledge to help customers. Such workers require loose structures and flexible systems with less hierarchy and more opportunity. McGowan, Reid and Styger (2018) address constructivist theory about knowledge workers. The concept of knowledge workers (Drucker, 1959) and knowledge worker use is relative to economic development. However, the economy is far different now than it was in the 1950s. The term "knowledge worker" has evolved in the 21st century. McGowan et al. (2018) identify 11 different characteristics of 21st century knowledge workers. Some of these characteristics include high skill levels such as from education and abstract reasoning, the ability to create new knowledge from existing knowledge, need to use a high level of knowledge and information in their day-to-day activities to complete tasks, and often do not conform to a set of rules.

McGowan et al. (2018) indicate that knowledge workers follow an enhancement process that follows three basic stages. The first stage includes the ability to bring together different types of knowledge and information toward finding that which is most relevant to their needs and purpose in a given situation (which can also be changing frequently). During the second stage, knowledge workers come to understand that simply acquiring information is not enough. They understand that information must be actively applied. In the third stage, after knowledge workers have actively sought out/discovered information, applied the information, discussed, and embedded what they have learned, they share their knowledge, understanding and information with others, because they believe others will benefit. This follows a similar and time-honored process of older people teaching younger people and is a consistent role for knowledge workers when they convey knowledge to others.

In graduate education, constructivism has the potential for bringing many different work and life experiences into the classroom because the personal experiences many students already have when they are returning to obtain or complete graduate degrees contributes to learning. Many have worked in organizational and business environments following completion of undergraduate degrees, to include military careers. Many have, also, already experienced management and leadership situations which can be brought to bear in the context of the MSM program and used for applied learning.

The authors of this paper propose that this is accomplished less effectively in many graduate programs, because there is high reliance on cases that relate poorly to student context/experience. As a result, the authors propose that using the work experiences of graduate students in direct application of learning can provide a more engaged, motivated, meaningful and significant learning experience. Graduate students apply what they learn on a daily and weekly basis at their place of employment and use their situations and experiences as sources to analyze models and develop improvement plans. The purpose of this paper is to review how discussions and other activities, e.g. writing assignments, are developed using student experiences, and how this is accomplished in a graduate business program as part of the standard curriculum.

Teaching Methods

Lee, Lee, Liu, Bonk & Magjuka (2009) consider case-based learning to be a substantial contribution for instructing online MBA students, and acknowledge that case-based learning provides real-world application, thus enhancing knowledge transfer. As noted earlier, cases used are frequently hypothetical or based on a previous real-life situation in another organization. This industry collaboration is not new, and indeed, has been used for many years, based on personal communications between these authors and faculty members at other institutions. Plewa and Questor (2006) propose another innovative approach where students develop cases in graduate marketing within any postgraduate (master) level course. In this case, methods may assume different forms and purposes, such as pre-written cases, live or client cases, client projects, or the case development approach to selecting a topic of their choice and developing a case from that topic.

Applied Case Learning

The classes used as exemplars for this paper share several characteristics. These are core classes in an online MSM curriculum, they are taught only by full faculty members (most ranked as Professor), they are taught through weekly modules that require students to read, watch, and deliver course materials on a regular schedule, and they are designed as templates, whereby instructors can add to the original, standardized content but cannot remove any of the original template content. These courses have dedicated faculty members, such that there is little churn in the approach to teaching the courses.

The courses have been taught primarily in domestic sites but have also been used internationally. The university is a traditional university with a well-developed (early mover) online presence located in the southeast United States. The courses are taught through the college of business which is accredited by AACSB. The students in the graduate program are, primarily, fully employed adults. Unemployed students are rare. Student ages currently range from 23-64 years. Active military students regularly account for 25-30% of enrollments. The student body is extremely diverse and international, as captured in discussion boards about personal culture. Students have completed a minimum of three theory courses prior to beginning work in the application courses.

Table 1 provides a synopsis of the concepts/theories as applied in two graduate MSM - Leadership courses. There are multiple overlapping applications intended to reinforce learning, and these applications have similar constructs in the three courses discussed in this paper, so they are reinforced not only within specific courses, but between courses in the program. One critical element for the instructors is the frequent, direct, and purposeful participation in the discussion boards with the students. Through this effort instructors lead students into self-direction, self-management, reflection, application, and a deeper understanding based on their personal work experiences.

Table 1. Teaching and Learning Theories with Course Applications

Author	**Concept**	**MSM Quality Course Examples**	**MSM Change Course Examples**
Knowles (1970, 1984); Kenner & Weinerman (2011)	Andragogy • Increasing level of self-responsibility for directing • possesses experiential knowledge • motivation driven by changing tasks and problems • desire to acquire knowledge necessary to deal with the changes	Courses are established with andragogy as a foundation, knowledge gained from experience is applied. Integrates systems theory, diagnostic models, Baldrige Framework (MBNQA Criteria), SWOT and implementation	Independent research is the basis for all course work. The text is one source of many used in this course. Practice case for writing a planned change initiative. This process and vocabulary are new to virtually all students. A practice case for a proposed process improvement analysis is used.

Merriam and Cafferella (1991)	Self-directed learning	Selecting problems from current work environments to identify, analyze, and make recommendations for improvement	All materials are available throughout the course. Students choose individual projects.
Kosnick, Tingle & Blanton (2013); Kolb (1984, 2005); Ferguson, Makarem & Jones (2010)	Experiential Learning • uses concrete experience to analyze and reflect • uses ongoing experimentation based on experience and knowledge • Course instructors are mentoring, coaching, and providing meaningful and timely feedback • critical reflection	Concrete experiences are the student work experiences. Ongoing experimentation includes applying course concepts to the major (final) course organizational proposal. Reflection and discussion boards, feedback on writing assignments; team case for practice and major individual final project; team case practice	TED Talks are used to support lectures. This expands course lectures to Subject Matter Experts as mentors and coaches. Relieves boredom. Active communication requirement in discussion boards. Students must respond to each other as well as any questions from the instructor. Two change initiative cases for an organization currently in operations. These cases are practice for the final case. Students propose a process improvement for their workplace or other organization.
Liu & Chen (2010); Huang, 2002	Constructivism • Problem-based teaching • allow students to construct appropriate skills, knowledge and attitudes to create sustainable environments	Students interact on the discussion boards by explaining the concepts in terms of their industries and occupations, guided by questions and inquiries from the instructor which they are expected to answer, as well as questions from others. Apply models to work situations,	Required approach to third case: a current and real problem must be the reason for the plan. Includes background and introduction to the problem as well as setting assumptions to guide the plan. The process improvement proposal requires the same –

	• problem-based teaching Self-managed, self-directed, time management	process improvement, measures, and create a continuous improvement loop	background, introduction, and assumptions.
Prandini et al. (2012)	Situated learning Increase use of experiential learning techniques because they are more powerful and more challenging	Team and final writing assignments and discussion boards are based on application of course concepts to current or previous positions.	Final case project is a real time, real world project, designed to be implemented and evaluated immediately.
Brookfield (1986); Popper, (2005); Stein, Wanstreet & Calvin (2009)	Reflection and reflective exercises - Critical reflection promotes critical thinking • analyze, identify and relate core concepts to personal experiences • self-directed, self-managed	Used every week in the discussion boards to reflect on how it applies to their situation, what it means for them, and what they can do with the information (integrate, apply, reflect). Instructor involvement with every discussion; provides extensive feedback on written assignments; instructor availability throughout the entire course.	Discussion Boards over course concepts, require students to explicate concepts. EX: Culture analysis of family, church, work, or university program using two different approaches to culture. Every written exercise is a critical thinking opportunity. Rote recitation of facts is unacceptable.
Kegan (1994); Ignelzi, 2000)	• Meaning making Tenants: 1) humans actively construct their own reality; 2) meaning making develops over time and experience; 3) process of learning and teaching is strongly influenced by the way participants make meaning	Reflection and critical thinking in written assignments, discussion boards, and instructor interaction; business proposal for a process improvement in their workplace; co-construction with peers in team assignments; business process improvement proposal	Change initiative plan for current employer. This is an extensive piece of work that requires deep critical thinking. Discussion responses to each other. Process improvement plan for current employer is proposed.

MacGowan,Reid & Styger (2018); Kantor (2000)	Knowledge workers • bring together different types of knowledge & information most relevant to their needs and purpose in a given situation 3 stages: 1) bring together knowledge and information, 2) understand simple acquisition of knowledge is not enough, it must be applied, 3) third stage is to apply the information - discuss, embed, and share	Integrates with andragogy, constructivism, and experiential learning. Business case proposal with an executive summary, analysis, recommendations, implementation, and evaluation with measures	Lectures provide instructions and a framework for the coursework of writing planned change initiatives. Students develop high skills in presentation, analysis, recommendation, implementation, and evaluation of real-world, existing problems.
Espasa & Meneses (2009)	Feedback process as a key element in a teacher's role	Instructor involvement in every discussion, providing extensive feedback to writing assignments usually within 5 days or less; instructor availability throughout the course	Explicit feedback for each case (Ex: "Do this, not that.") is provided 1-5 days following submission deadline for all cases.

DISCUSSION

Adult learners, often seen as employed students, bring life experiences that can be used as the foundation for academic success. (Fede, Gorman, & Cimini, 2018) Although Kenner and Weinerman (2011) focus on entry-level adult learners in college, there are many similarities with adult learners in graduate school.

Adults have significant practical workplace knowledge which can be leveraged to enhance academic knowledge and skills, and they frequently develop learning strategies from this practical knowledge which have been successful in their careers (Kenner & Weinerman, 2011). When these skills can be applied in a course, they develop confidence and capability. This is accomplished by integrating their professional knowledge, experience and capabilities into an academic setting. This requires that instructors explore different ways to examine and integrate this information into course activities.

By using students' organizational knowledge to provide examples, critical thinking is required to apply models retroactively to events in their organizations. In the MSM program, this is accomplished by requiring students to examine work processes, situations and events relative to the course content, including discussion boards and assignments. One of the major benefits from this approach is that students are exposed to many different occupations and industries with examples of model and theory application, practical experience, and outcomes from all of the class members, all in a professional and friendly environment.

By creating material within their personal frameworks, students have a direct connection to their current work responsibilities as well as their academic goals. Additionally, the learning tools, such as diagnostic tools, are easily adapted to meet individual work situations, even allowing students to take what they learn in a course in one week and apply it the next week in a professional setting. Students frequently use discussion boards to share how they were able to make suggestions at work or apply specific models. This approach generates excitement, engagement, and interest in learning more.

An effective way to simplify complex tasks is by creating components (Kenner & Weinerman, 2011). This is achieved with separate learning modules and linked content with increasing complexity throughout the course of the program, such that content is found in multiple courses, not only as reinforcement, but also as knowledge that can be applied eventually in more complex assignments. This is accomplished in the MSM program through weekly modules, assignments for individuals and teams that require component completion, which then accumulates to provide a comprehensive assignment.

Kenner and Weinerman (2011) also suggest that the metacognitive strategies already developed by adult learners can make them resistant to change, and, therefore, repetition is critical when learning new strategies and new approaches. In the MSM program, numerous key concepts and models are introduced early in the program, e.g. leadership theory, organizational theory, and tools for organizational diagnostics including gap analysis, and strengths, weaknesses, opportunities and threat models (SWOT), which are then repeated and used in successive courses, again, reinforcing increased complexity and knowledge transfer/application.

Student comments and evaluations over the past five years have been extremely positive and often excited. Comments are often unsolicited and are found in personal communications with instructors or through other students as well as course evaluations. Many students have identified the linking of concepts, the "daisy chained" courses, over the program and the benefits of repetition as a primary strength of the program. Other comments include the acknowledgment that concepts learned are extremely relevant in their own workplaces and in their environments, regardless of the industry.

Comments also reiterate how they learned things that they did not know they needed, identified gaps in their knowledge, and identified opportunities to engage in application, techniques, and frameworks that they did not know existed. Others comment about how they are looking forward to applying what they have learned about processes, leadership, and models to their organizations, and finding ways to make improvements. Often this goes beyond a local office and is expanded to a regional or national level based on the students' positions in the organization and industry.

Through active military students, numerous projects have been applied that have changed the way the military services approach, identify, improve and measure processes.

Others acknowledge how they have learned many new topics that they did not know existed, and how they have developed a much deeper understanding of the topics they thought they knew. Students also discuss how topics and concepts apply at work, as well as how they appreciate hearing about other work examples, so they can see how situations can have an impact on implementation and approach.

As applied case studies developed by the students themselves, these learning projects provide powerful opportunities for students that include immediate and direct application to work situations, leadership opportunities, application of theories and models, and opportunities for career enhancement. Kosnick, Tingle and Blanton (2013) identified the academic value, professional value and moral value of such projects in connection with AACSB standards (2017).

While much has been reported about the benefits for students, the benefits for instructors and the university are also notable. These projects are designed by the students to address specific issues in their own organizations and clearly provide transformational learning. For the instructor and university, impact with employers is notable and documentable. Impact is demonstrated in a wide variety of industries, levels of responsibility, and experiences.

CONCLUSION

These are challenging times for higher education, and there is no greater challenge than finding creative and engaging ways to educate graduate students who are preparing to be society's leaders. While lecture classes continue to populate the majority of time slots on university course schedules, this paper provides significant evidence that alternative teaching methods are effective for meeting the many demands for improvement of graduate education. These methods provide powerful opportunities for both students and universities to improve student learning outcomes while achieving higher satisfaction and stronger relationships with students and employers.

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STORYTELLING FOR SUCCESS IN THE COMPETITIVE GLOBAL MARKET

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ABSTRACT

In today's globalized society, organizations are competing for clients all over the world. Increased accessibility of technology has expanded globalization and made it possible for companies to move business efforts from a local to global scale. The opportunity to connect with global customers has created a challenge for companies—a competitive global market. This paper explains how organizations should utilize storytelling to combat global competition. Storytelling will move consumers along the customer journey model by creating personal connections with consumers, guiding how consumers ask and act, and turning consumers into brand advocates. A review of pertinent literature on the competitive global market, storytelling, and the customer journey model is included. The impact of technology and innovation in global markets is reported. Organizations' roles in creating programs and training employees with an understanding of the cultural values of the markets they do business in is also discussed. The review of storytelling shares the permeance of stories and how organizations use them to connect with customers. Lastly, the paper explains the progress of customers connecting with a brand through the five pathways of the customer journey model: aware, appeal, ask, act, and advocate.

Keywords: customer journey model, storytelling, globalization, global competition

INTRODUCTION

Globalization is creating connections across the world. The advent of technology has sped up the process in recent years, making it possible for people all over the world to connect almost anytime, anywhere. With an interconnected global community there are many benefits, as well as challenges.

Billions of people have "integrated into the global economy over the past three decades" (Irwin, 2018, para. 4). This integration created more consumers worldwide and benefited many organizations in expanding their global consumer reach. For organizations, "going global is not only a possibility, it is almost a necessity" (Johnston, n.d., para. 1). Because of this, companies that have traditionally been engaged in local and national competition now must learn how to compete in a global market.

For organizations to stay competitive in a global market, they should utilize storytelling to relate to consumers across cultures. Storytelling is engaging and powerful (Nossel, 2018). Customers remember stories they hear and connect with them, thus fostering a connection between customer and organization. Companies should also make use of the customer journey model (Appendix A). Buying a product is no longer an individual decision, it is becoming a community decision.

Individuals are influenced by friends, family members, and online communities throughout every step of their buying process. Brands can take advantage of these conversations by building a story around which individuals can discuss. The stories a brand tells about itself shape how that brand is perceived by consumers. Research shows that the customer journey begins when a customer becomes aware of a product and ends when a customer begins to advocate for a product (Kotler, Kartajaya, & Setiawan, 2017).

Thus, this paper will examine important literature on the competitive global market, storytelling, and the customer journey model, followed by a section focused on details of the topic, and lastly a conclusion. Each section gives support to the assertion that organizations can successfully compete in the global market by utilizing storytelling to create personal connections with consumers, guide how consumers ask and act, and turn consumers into brand advocates as they move consumers along the customer journey model.

LITERATURE REVIEW

Competitive Global Market

Globalization effects organizations world-wide. With markets becoming increasingly integrated, an organization's ability to connect with consumers globally is more important than ever (Pukthuanthong & Roll, 2008). To do this, organizations must understand the competitive global market. The following will review literature on the competitive global market.

Technology has arguably played the largest role in connecting markets worldwide. Arrighi (1999) connects globalization to technology in his definition of globalization as a "process driven by major technological advances in the transmission, storage and processing of information" (p. 217). People can connect with each other and companies world-wide at any given moment via a variety of platforms. Consumers not only want to connect with companies through technology, but they want to see that companies are utilizing technology in their business models and products. According to Bagley, "innovation and entrepreneurship are crucial factors in sustaining and growing U.S. competitiveness in the world" (para. 3). If organizations are not creating new products and finding new ways to connect with their publics, consumers will lose interest in them on a local and global scale. Technology allows companies the opportunity to showcase connection with consumers, as well as their ability to innovate.

Competitiveness and innovation are linked. Often companies innovate in order to stay relevant within the global market. According to business executives and educators, Thompson, Strickland, and Gamble, "global competition exists when competitive conditions across national markets are linked strongly enough to form a true world market and when leading competitors compete head-to-head in many different countries" (Velocity Global, 2017, para. 4). Global competition is a reality for many organizations today and for organizations to find success amidst tough competition they should have a strategy for competing in the global market. Velocity Global (2017) suggests the following three "best practices" for companies to adhere to when planning their strategy for competing in the Global Marketplace. First, *scour emerging markets*. Emerging markets are full of potential opportunity and by investing in these markets, organizations may gain a competitive edge over their competition. Second, organizations should *form strategic* *partnerships*. Partnering with locals in the market you are trying to reach is a must. Companies will better understand the environment and culture they are trying to compete in if they understand the local customs. Lastly, *innovate everywhere*. As mentioned above, innovation is key in staying competitive in a global market. An ability to be flexible and make changes to products or systems in order to fit the culture a company seeks to serve is imperative. The bridge that digital media and innovation builds between companies and consumers encourages constant connection and helps people and organizations better understand one another cross-culturally.

Organizations must research and then implement business practices that are appropriate for the global market they are engaging. Companies like Amazon are cognizant of this as they use technology to connect and do business with consumers globally. Amazon's global success is due in part to the business model it has created for adapting business practices to different cultures (Garner, 2018). In one instance, Amazon recognized the "diversity in the Indian people" and it made sure that its marketing efforts were not too centered on the global Indian market alone but corrected efforts to include the local nuances of the various people groups within India (p. 8). To succeed in the competitive global market, organizations must take a *glocal* approach similar to Amazon. Companies must recognize the differences within each market they are entering, just as they recognize these differences within their home countries of business. Research suggests that having a diverse leadership team may aid organizations in thinking globally, thus enabling them to better compete well in the global market (Lisak & Erez, 2015).

A study by Lisak and Erez (2015) defined global leaders as people with high levels of "cultural intelligence, global identity and openness to diversity" (p. 11). Organizations should assess their employees on these characteristics in order to understand how well employees will do when engaging in cross-cultural business. Building teams that are culturally diverse and offering training programs for team members and leaders within the company that are centered on global characteristics, such as the ones mentioned above, are necessary for building teams that will be able to successfully compete in the global market. Ideally, organizations should train employees to approach business from a *glocal* perspective, realizing that leaders who are only focused on local efforts will probably fail to build a thriving multi-cultural team and those with a global-only perspective may miss important local nuances which need attention in order to gain consumer business and trust (Lisak & Erez, 2013). Leaders who understand the importance of thinking both globally and locally will prosper in the competitive global market.

Storytelling

Storytelling is linked to the very beginning of humanity (Nossel, 2018). Ancient storytelling allowed information to be passed on from one generation to the next. Storytelling has always been linked to remembering. Today, storytelling helps consumers remember certain products and brands that identify with their own personal narratives. Consumers' satisfaction in a brand increases when they see their own stories and causes supported in the brands they purchase (Kotler et al., 2017). Storytelling can help an organization position itself more strategically in a competitive global market (Alexander, 2017). This section will review literature on storytelling.

Narratives are effective in helping consumers remember intended messages (Chattoo & Feldman, 2017). When a story is told, people listen. Not only do stories engage people, but "much information is stored and indexed in the form of stories" (Woodside, Sood, & Miller, 2008, p. 97). Organizations focused on marketing and advertising should utilize storytelling to build positive consumer-brand relationships. (Woodside, et al., 2008). Using narrative theory, Woodside and colleagues (2008) attempted to explain the way consumers use brands as "props or anthropomorphic actors in stories they report about themselves" (p. 97). The researchers asserted that a good story should incorporate "a tension that includes one or more inciting incidents preceded by conditions or settings that initiate the unconscious/conscious identification of one or more goals, with actions by a protagonist and possibly other actors resulting in an outcome" (Woodside, et al, 2008, p. 101). A company using story should position itself or its product within the tension of a story and then allow consumers to identify a clear protagonist (the company or product) and its successful transition from tension to goal achievement.

Storytelling is also helpful when organizations join forces—whether officially to form a new organization or simply a partnership for a charity event (Edwards, 2012). In an age when "media conglomeration and corporate synergy" is the norm, multi-platform storytelling can help companies run their businesses more successfully (p. 1). Edwards explains that multi-platform storytelling refers to "texts where content appears in a coordinated way across many different media platforms" (p. 1). Stories will engage the consumers and the use of coordination between media platforms will help keep their attention. Organizations must be consistent with their messaging when using multi-platform storytelling. While it may seem daunting to produce consistent messaging for various platforms, an organization that does this will benefit by reaching more audience members than if it only communicated from one or two platforms. For example, consumers who get their information from their mobile phones (e.g., Facebook, Instagram, or Twitter) may rarely use traditional media sources for information (e.g., Television or radio) and vice versa. Thus, by telling stories through a variety of platforms, organizations reach a larger audience. However, they must remember to keep the stories consistent in order to strengthen their brand identity.

As briefly mentioned above, digital storytelling is a powerful resource for organizations seeking to remain competitive in the global market. Maintaining quality digital storytelling content is a must for organizations as 90% of 18-24 year-olds, 86% of 25-34 year-olds, and 53% of over-55 year-olds notice internet ads (Mintel, 2018). Global companies like Coca-Cola put storytelling at the center of their marketing strategy (Pulizzi, 2012). Digital content marketing can be used by organizations to connect with consumers on a deeper level than simply trying to make a sell. It utilizes storytelling to "attract and retain" customers (Pulizzi, 2012, p. 116).

When thinking of how to best tell a story to global audiences, one should consider the theory and strategy mentioned above as well as the main players in the storytelling process. Global storytelling includes three key groups: experts, tellers, and contributing listeners (Garlock, 2012). The experts are the ones "who first share their work," the tellers pass the stories along, and the contributing listeners are the audiences (p. 141). In the competitive global market, an organization can be considered the "expert" because it is the first to share an important message. Publics who are already brand advocates may turn into "tellers" who pass along the organization's story, and consumers who listen to the story become the "contributing listeners" or audience. Storytelling is appealing to consumers. Organizations competing in the global market should utilize its powers to connect with consumers through multi-media platforms.

Customer Journey Model

This section will review literature on the customer journey model. Initial studies by Abbot (1955) and Alderson (1957) commented on why consumers purchase what they purchase, "what people really desire are not products but satisfying experiences" (Abbot, 1955, p. 40). Additional research supports that whenever consumers purchase a product they buy into the product as an experience and as a representation of what the consumer aspires to accomplish (Kotler et al., 2017). Other research shows that when consumers buy a product, they are trying to accomplish a certain job with this product (Ulwick, 2005). Thus, companies must be aware of each individual customer journey in order to best sell to targeted consumers (Lemon & Verhoef, 2016).

One of the first definitions and frameworks used for the customer journey model was "AIDA, attention, interest desire, and action" (Barry & Howard, 1990, p. 100). Sales managers would use this model to ensure that consumers would buy their products as a result of seeing an advertisement that would ideally create interest and desire in the mind of the consumer (Kotler et al., 2017). This model was once updated to emphasize the importance of consumers acting again in the four A's model: "aware, attitude, act, and act again" (Kotler et al., 2017, p. 60). In this updated version, interest and desire are transformed into attitude, and "a new stage, act again, is added" (Kotler et al., 2017, p. 60).

This modified framework tries to measure "post-purchase customer behavior and measure customer retention" (Kotler et al., 2017, p. 60). The four A's framework is a simple model that helps marketers better understand the customer journey. "Customers learn about a brand (aware), like or dislike the brand (attitude), decide whether to purchase it (act), and decide whether the brand is worth a repeat purchase (act again)" (Kotler et al., 2017, p. 60). When the model is treated as a customer funnel, the number of customers that transition from one stage to the next begins to decrease because more commitment and action is required as the customer transitions from each stage (Kotler et al., 2017). The four A's framework describes the customer journey in simple terms, but the model is outdated. This model served the TV advertising age well, but in the era of the internet, social media, and global connectivity a new model is needed.

Before globalization, an individual consumer determined his or her attitude toward a brand. In the era of globalization "the initial appeal of a brand is influenced by the community" (Kotler et al., 2017, p. 60). Whether an individual decides to follow, tweet, or engage with a brand online is a social representation of who that individual is. As the number of brands and products begins to rise so does the amount a consumer begins to question competing brands—thus, adding the "ask phase" into the new model is essential (Kotler et al., 2017). In the era of globalization, the new customer journey model is "the five A's: aware, appeal, ask, act, and advocate" (Kotler et al., 2017, p. 62). A graphic of this new model is in Appendix A.

The aware phase in the customer journey model is when customers first learn about the brand. It begins when "customers are passively exposed to a long list of brands from past experience, marketing communications, and/or advocacy of others" (Kotler et al., 2017, p. 64). The appeal phase is when customers "become attracted to brands" and begins when "customers process the messages they are exposed to—creating short-term memory or amplifying long-term memory—and become attracted only to a short list of brands" (Kotler et al., 2017, p. 64). The ask phase is when customers "call friends for advice" and "search for product reviews online" (Kotler et al., 2017, p. 64). Customers are "prompted by their curiosity" to "actively research for more information from friends and family, from the media, and/or directly from the brands" (Kotler et al., 2017, p. 64). The act phase is when the customer buys the good or service. Lastly, the advocate phase, which is what many marketing scholars argue is the most important and powerful phase of the business and consumer relationship ends the customer journey model (Keller, 2007; Kotler et al., 2017; Urban, 2004). The advocacy phase is when a customer recommends a product to a friend or when a customer defends a brand or product either online or through face to face communication (Kotler et al., 2017). Advocacy is also demonstrated when consumers continue to repurchase the branch or product (Kotler et al., 2017). These five phases of the customer journey model are appropriate for organizations to consider in order to succeed in the competitive global market.

DETAILS OF THE TOPIC

Storytelling Creates Personal Connections with Consumers

Storytelling is not a new concept. It has been used to teach, engage, and inspire audiences since the beginning of time (Nossel, 2018). Borum Chattoo and Feldman (2017) suggest that narrative is necessary for engaging audiences and with the widely available technology that can reach global networks (e.g., social media, internet, video streaming), organizations have opportunities to compete in a globalized economy. Due to its high potential for engagement and the technological advances that have made storytelling an instant and influential means of connecting, organizations should utilize storytelling to build connections with consumers during the aware and appeal processes of the customer journey model.

According to (Kotler et al., 2017), in the *first A* of the customer journey model, awareness, "customers are passively exposed to a long list of brands from past experience, marketing communications, and/or advocacy of others" (para. 1). In the aware pathway, the customer is experiencing the feeling of "I know" this brand. Because stories have the power to create awareness and recall, they are a powerful vehicle for engaging consumers in this section of the customer journey model by increasing audience participation with a brand (Edwards, 2012). An increase in audience participation is necessary to stay competitive in a global market as consumers are flooded with brand messages daily. Intriguing storytelling strategy creates connection with consumers which results in brand awareness. This awareness through storytelling offers organizations a leg up on the competition.

The *second A* in the customer journey model focuses on the *appeal* that organizations must make to customers (Kotler et al., 2017). In the "appeal path," customers discern if they like the brand (Kotler et al., 2017). Organizations can use storytelling to appeal to the desires of consumers, instilling an "I like" attitude toward a brand. When customers "like" a brand, they feel connected to it. Stories help organizations build a bridge between the rudimentary details of a product to how consumers feel, connect, and think about the product. Garlock (2012) suggested that global storytelling helps cultures extend "into each other" (p. 144). Using stories that can connect across cultures helps companies extend their reach, influence, and appeal. When a customer feels connected to a brand through story the brand is more likely to appeal to its global audience. Facebook and Coca-Cola are two brands that use digital storytelling to connect with consumers.

The following analysis of their digital storytelling campaigns shows how each company connects with customers as it moves them through the aware and appeal stages of the customer journey model.

Brands are moving away from a product/service-centered approach and want to show consumers they care about them. In 2018, Facebook released an ad campaign titled, "The Best Part of Facebook Isn't What Happens on Facebook. Get Together" (Dimartino, 2018). The ads highlighted 15-second video clips of groups of friends connecting. From dance lessons, to dinner at a food truck, a skydiving trip, along with other relevant storylines, Facebook showed its users that it cares about their meaningful experiences with friends. When consumers feel like a company cares about their social health it invites a deeper consumer connection with the company. The activities Facebook shared in the ads span cultures and show ethnically diverse populations—an important strategy for a global company seeking to succeed in a competitive global market. These ads not only showed friends enjoying one another during a favorite activity, but they reminded users to post on Facebook about the fun experiences they had with friends.

To move customers along the aware and appeal stages of the customer journey model, Facebook engaged consumers through compelling stories and connected with customers over common themes of friendship. Nossel (2018) explains that "stories bring experiences to life and are memorable" (p. 23). Because of all the many ads customers are exposed to, companies competing in the global market must find ways to remain in a consumer's memory and storytelling is the way to do this. When consumers recall meaningful stories they saw posted by Facebook, this shows that Facebook has successfully moved them through the aware and appeal paths in the customer journey model. The company succeeded in moving customers along the rest of the customer journey model by encouraging users to share their own experiences via Facebook. Connecting with customers through storytelling in order to move them along the first and second stages of the customer journey model is a key strategy for companies hoping to succeed in the competitive global market. Another company doing this well is Coca-Cola.

Coca-Cola's docuseries "One Last Summer" shares stories about a friend group of recent high school graduates trying to enjoy their last summer as kids (Moye, 2018). The focus of the docuseries is the students not Coca-Cola, though the product is subtly and naturally shown throughout the series. A storytelling strategy with the primary focus on the customer instead of the product makes customers feel cared for by the brand, thus fostering a sense of connection to the brand. As a big brand competing in the global market, Coca-Cola must constantly innovate to stay relevant. The "One Last Summer" docuseries was marketed through social media and could be viewed anytime through YouTube and company sites—giving it the opportunity for global reach.

Stories of friendship and summer were used to connect with audiences and succeeded in moving customers through the first two steps of the customer journey model. In the aware pathway, Coca-Cola showed audiences its stories and grabbed their attention. Audiences had the opportunity to build a deeper connection with the brand at this stage in a variety of ways. For example, consumers might have found a favorite character to follow thorough the docuseries, reminisced the joys of summer as a teenager, or felt inspired to make the most of their current summer. These thoughts and feelings connect consumers to Coca-Cola and give the company an edge over competitors who do not use compelling digital storytelling to connect with customers. Stories like the ones chronicled in the "One Last Summer" docuseries move customers through the aware and appeal stages inciting feelings of "I know this brand" and "I like this brand"—resulting in customers remembering the brand and continuing the trek through the customer journey model. Digital storytelling with the intent of connecting with consumers to move them along the customer journey model is necessary for brands hoping to succeed in the competitive global market.

Storytelling Guides How Consumers Ask and Act

Anciently, the only way to acquire many goods and services was to exert great physical effort and walk to the destination where merchants would sell various goods (Edens, 1992). In the modern world the customer journey has shifted from a physical journey to a mental journey (Kotler et al., 2017). Instead of walking many miles and greeting one or two sellers—now consumers hardly walk at all, rather they click or tap their way through their purchase (Pires, Stanton, & Eckford, 2004). Although this decision-making process requires less physical energy it requires great mental energy (Kotler et al., 2017). Modern consumers must choose between tens to hundreds of different brands and product options to decide which product option is right for them (Kotler et al., 2017). Thus, consumers must ask many questions about their products to ensure that the product they are about to purchase is the right product for them.

The *third A* in the customer journey model focuses on how customers "ask" about the product or service before purchasing (Kotler et al., 2017). Organizations can help answer consumers' questions about their products by supplying meaningful narratives for consumers to learn from through online videos and question and answer forums (Stone, Machtynger, & Machtynger, 2015). Organizations can encourage consumers to want to ask more questions by instilling a sense of curiosity about the product for the targeted consumers through storytelling tactics. These tactics may include strategic product placement in a movie or show that identifies with the target market or the creation of a video that tells a compelling story about how the product is used. Products begin to take on a sense of higher meaning when brands create stories around their products (Woodside, 2010). When this happens, consumers start to become curious about the product (Kotler et al., 2017). This curiosity leads the consumer to ask questions about the product to friends, families, and online communities (Kotler et al., 2017).

Thus, storytelling can help instigate global discussions about a product and its meaning beyond it simply being a cleaning product company, a car company, or a shoe company. Two recent cases that show the power of storytelling are Nike's advertisement with Colin Kapernick and Apple's "Share Your Gifts" advertisement (Griner, 2018). Nike used Colin Kaepernick's story to showcase the importance of believing in something, "even if it means sacrificing everything" (IQUII, 2018). This story-based advertisement quickly became one of the most discussed and viewed advertisements of 2018—helping Nike increase its sales and popularity amongst its domestic and global target markets (IQUII, 2018). This case study is a great example of how Nike used Colin Kaepernick's story to take a political and cultural stand—making Nike more than just a shoe company to consumers. After Nike's advertisement, consumers could purchase Nike products knowing they were supporting a political and cultural movement. Similarly, Apple's recent holiday commercial was an animation that showcased a shy young girl who eventually finds the courage to share some of her art with the world (Griner, 2018). The story did not chronicle someone showing off the latest product features of the newest Apple technology—rather it used story to connect with content creators and artists from around the world. The message encouraged content creators and artists to purchase Apple products, because Apple believes creativity is important. Both Apple and Nike chose to stand for something in 2018 that went beyond the products they showed. The companies used storytelling to give their brand a sense of meaning that went beyond the meaning of the products they sell. Thus, successfully and subtly encouraging more curiosity and questions from consumers.

Storytelling encourages curiosity amongst consumers, and curiosity eventually prompts consumers to "act"—which is the *fourth A* in the customer journey model (Kotler et al., 2017). Consumers act and engage with a company when they decide to purchase a service or product from that company. Purchase is connected to storytelling through how the packaging is displayed in stores (Yuwono, 2016). If the packaging helps to reinforce the brand image and narrative, it can help push purchase intentions (Yuwono, 2016). If the product's features or packaging does not live up to the story the company has created, then the consumer will ultimately feel unsatisfied (Jin, Ji & Kwong, 2016). Many unsatisfied customers can weaken a company's brand image and can ultimately lead to a company's collapse.

It is imperative that a company ensures that the stories it tells are truthful and authentic. If a company says they are selling the most comfortable mattresses on the planet, they must produce high-quality mattresses. Many unsatisfied customers are inevitable if the company gives out a false message. Organizations should create stories that mirror their products to ensure consumers have a positive experience with each product (Stone et al., 2015). Additionally, excellent customer service can help consumers have a positive shopping experience (Timm, 2011). How company employees help, relate with, and connect with consumers can help tell a brand or product's story (Timm, 2011).

The elements listed above will lead consumers to purchase products, and storytelling is at the heart of innovating the customer experience (Stone et. al., 2015). This innovation can increase the company's revenue and value—helping the company stay financially competitive in the global market. With more companies going global, domestic and global business competition increases (Irwin, 2018). Companies can no longer afford not to tell their stories in a professional and compelling way.

Storytelling Turns Consumers into Brand Advocates

Selling products was once the end goal of all advertising and marketing objectives. That is not the case in today's globalized societies. Consumers must become more than just numbers on a business spreadsheet. The end goal for all marketing and sales objectives should be to transform product purchasers into product advocates, and eventually into brand advocates.

Thus, the final and *fifth A* in the customer journey model focuses on how satisfied customers can become loyal advocates (Kotler et al., 2017). "The role of marketers is to guide customers throughout their journey from awareness and ultimately to advocacy" (Kotler et al., 2017). For an organization to remain competitive in today's global culture—where anyone at any time can make digital media and share it online—a brand needs to have a defense system. The best defense system for any global or domestic brand is a group of loyal advocates (Kotler et al., 2017). A group of advocates can do online and in-person PR for an organization better than any organization can, and in ever-growing online chatrooms—brand advocates are needed now more than ever before (Fuggetta, 2012). Strong advocates can carry brands through crises and help strengthen a brand beyond what traditional advertising is able to do. Brand advocates should be the final goal of every organization (Fuggetta, 2012).

One of the most effective ways to help consumers become brand advocates is to ensure that a brand's story is consistent and honest to the products or services that the brand offers (Veloutsou, & Moutinho, 2009). If an organization tells a dishonest story through its advertisements, then consumers will respond with negative consumer created content. If this content is continually created and viewed through social media channels it can lead to consumers losing trust in the brand and ultimately the brand's collapse (Patel, 2019). Honest and truthful storytelling is one of the best ways to build brand advocates (Veloutsou, & Moutinho, 2009).

Using emotional and human-centric stories is another storytelling tactic for building brand advocacy. Studies show that people become emotionally attached to inanimate objects—including brands (Thomson, MacInnis, & Whan Park, 2005). Organizations can use this advantageously by giving human characteristics to a brand—something known as "human-centric marketing" (Kotler et al., 2017). A brand becomes human-centric when it takes on human qualities such as appearing "physically attractive, intellectually compelling, socially engaging, and emotionally appealing" (Kotler et al., 2017). These qualities can be communicated through emotional stories a brand generates about itself. Emotional stories are then able to persuade customers to become more emotionally invested in the brand, increasing the odds that a customer will turn into a loyal brand advocate (Thomson et al., 2005). The following two cases show how the power of storytelling can help transform product purchasers into brand advocates.

Designer Shoe Warehouse. Designer Shoe Warehouse's traditional loyalty program rewards customers with "points for each purchase and includes tiers of rewards that customers can unlock as they spend more" (Peacock, 2018). However, this loyalty program was old, and consumers easily forgot about their rewards—unless they were frequently reminded through a compelling narrative. Thus, Designer Shoe Warehouse implemented storytelling tactics by launching an email campaign in 2017 that used a compelling narrative to attract and remind more consumers about their products (Peacock, 2018). The emails focused on building trust with personalized stories and deals that made the content memorable and original (Peacock, 2018). Storytelling gave the loyalty program a new look and helped spotlight and connect passionate Designer Shoe Warehouse consumers to each other. Additionally, storytelling helped customers become excited about gaining more points. This is one example of how storytelling tactics help consumers transition from product purchasers to brand advocates.

Airbnb. Airbnb's "Stories from the Airbnb Community" webpage is another great example of how brands are using storytelling to increase brand advocacy (Patel, 2019). The campaign used the written word, photographs, and short films to give a snapshot into the lives of various Airbnb hosts from around the world. This helped relieve the anxiety that a lot of Airbnb users naturally have—the anxiety of not knowing whose house you will be staying at (Patel, 2019). Consumers can overcome that fear by viewing and reading stories from various members of the Airbnb community (Patel, 2019). Airbnb launched another campaign called "Belong Anywhere" to further combat common consumer fears about travel and staying at someone else's home. "Belong Anywhere" was all about how staying at a local's home can help you feel more like a local and experience the culture and place more authentically (Patel, 2019). The campaign used storytelling tactics through written testimonials and videos that showed how Airbnb can be more alluring than traditional hotels. Airbnb effectively used storytelling tactics to turn a potential weakness into a strength, and more effectively transform consumers into brand advocates.

Both examples show how important it is to use storytelling to guide the shared narrative around brands. Organizations should strive to create positive brand conversations online and offline by giving advocates content and stories to talk about. The buzz created by advocates will encourage excitement surrounding a product and result in more sales (Kotler et al., 2017). The more customers purchase a brand the more likely they are to recommend it to friends—effectively becoming stronger and stronger brand advocates (Kotler et al., 2017). Companies competing in the global market must supply advocates with consistent and innovative narratives surrounding their organizations and products in order to contend with competitors and remain relevant to consumers.

CONCLUSION

The literature review discussed the literature and definitions associated with the competitive global market, storytelling, and the customer journey model. Staying competitive in the global market requires companies to use the most advanced forms of technology to communicate their messages to targeted consumers. Companies can best accomplish this by thinking about their consumers through global and local perspectives. Storytelling is most effective when organizations consistently tell the same story using similar imagery across many different platforms. When using storytelling an organization should keep in mind who the experts, tellers, and contributing listeners are (Garlock, 2012). The customer journey model focuses on how companies and organizations can guide consumers through the *five A's* of the customer pathway— aware, appeal, ask, act, and advocate (Kotler et al., 2017).

The details of the topic discussed how organizations can use storytelling to move consumers along the customer journey model by creating personal connections with consumers, guiding how consumers ask and act, and turning consumers into brand advocates (Kotler et al., 2017). Companies can use storytelling to create personal connections with consumers by helping them see similarities between their own personal narratives and the brand's narrative—this will help guide consumers through the aware and appeal pathways of the customer journey model. Companies can then use storytelling to give their products and brand a sense of purpose and meaning—this will help guide consumers through the ask and act pathways of the customer journey model. Lastly, companies can use honest storytelling to build consumer trust and turn consumers into brand advocates—completing the final pathway of the customer journey model.

Storytelling is not a new phenomenon. It has always been used by people to teach, engage, and inspire audiences (Nossel, 2018). However, storytelling can be reimagined, reinvented, and reused for a variety of purposes as shown throughout this paper. This paper outlines a few storytelling tactics that companies and organizations trying to succeed in the competitive global market can use to guide customers through the five pathways: aware, appeal, ask, act, and advocacy (Kotler et al., 2017). However, the methods listed are not meant to be an exclusive list. The strategic uses of storytelling are as limitless as imagination itself.

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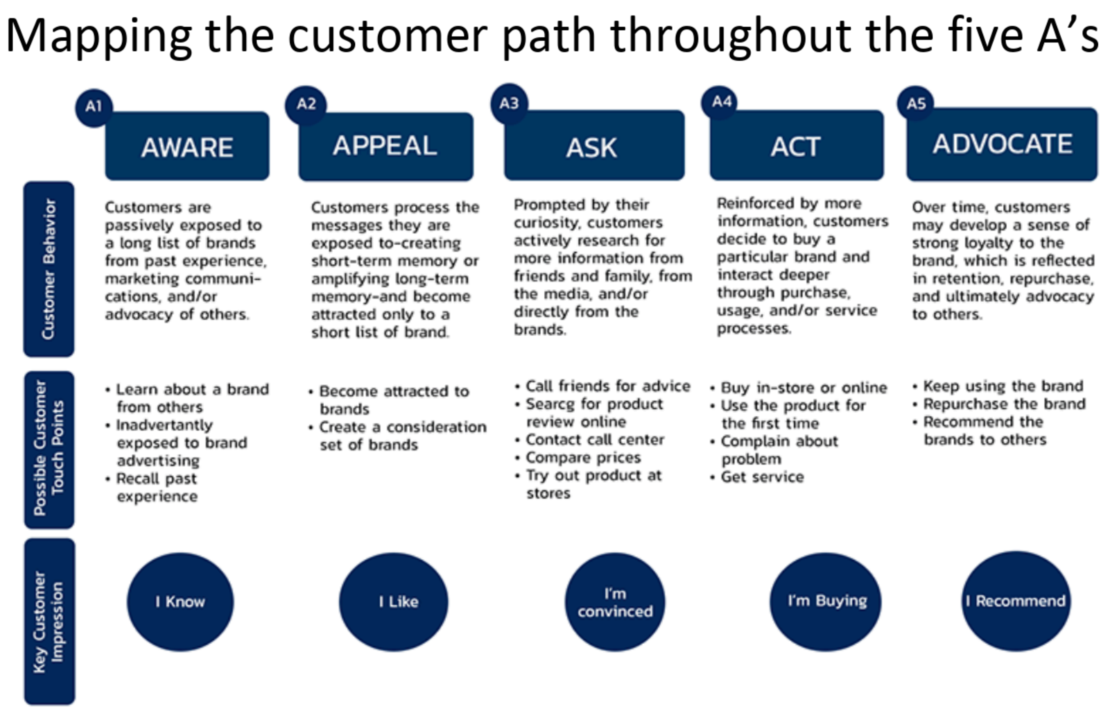
APPENDIX A: CUSTOMER JOURNEY MODEL



Kotler, P., Kartajaya, H., & Setiawan, I. (2017). *Marketing 4.0: Moving from traditional to digital.* Hoboken, New Jersey: John Wiley & Sons, Inc.

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CLOUD NOTEBOOKS: AN ALTERNATIVE TO A TRADITIONAL LEARNING MANAGEMENT SYSTEM (LMS)

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ABSTRACT

This paper describes the design and implementation of a Learning Management System (LMS) based on cloud notebooks and cloud storage. Cloud notebooks were developed to replace a Google Sites-based course website that previously functioned as an LMS. Prior to using the course website, Moodle was used briefly as the LMS. Compared to these two previous systems, the current notebook based LMS, also referred to as a Learning Management Notebook (LMN), is simpler to use and navigate. It can easily be modified, updated, and maintained by an instructor and lends to rapid development using affordable cloud resources. The paper discusses the user interface design, the mapping of a previously implemented course website onto a set of cloud notebooks, and the integration of the notebooks with cloud storage. It also describes the features that can be added to expand the scope of the LMN. Based on the experience gained with the deployment of the LMN in different courses, the advantages and disadvantages of using the LMN are discussed. The conclusion arrived is that, depending on the degree to which an instructor chooses to use the features of a typical LMS, the cloud-based notebooks can be a viable alternative to a traditional LMS such as Moodle or Canvas. When used in conjunction with cloud storage, a tablet computer and a collaboration platform such as Microsoft Teams, the LMN can offer many of the same features and advantages of a traditional LMS, but with better customizable options and easier navigation and manageability.

Keywords: e-learning, LMS, OneNote, cloud notebooks, LMN

INTRODUCTION

The objective of this paper is to discuss the possibility of using readily available and affordable cloud resources to configure an LMS that is easy to develop, deploy, manage, navigate, and use. Throughout this paper, the proposed LMS is referred to as a Learning Management Notebook or LMN. It incorporates the most frequently used features of a traditional LMS and has the following desirable characteristics to make the LMN an attractive alternative to a mainstream LMS such as Canvas.

- Rapid development with minimum or no coding required to configure the LMN
- Easy deployment and management of the LMN in the cloud
- Real-time updating of contents
- Seamless integration of the LMN across multiple devices
- Automatic backup and restoration of the LMN for high availability and reliability
- Availability to teach offline, if needed, without an Internet connection
- Usability as a whiteboard for in-class teaching

Since the proposed LMM is based on readily available cloud resources, it can be deployed in an institution that does not have a traditional LMS. Others have also discussed the possibility of using cloud resources to create a learning platform that could be substituted for an LMS (Wright, Lopes, Montgomerie, Reju & Chmoller, 2014). These resources can support not only the storage and retrieval of course-related information, but also the deployment of virtual computing laboratories in the cloud thereby enabling a comprehensive e-learning portal to be hosted in the cloud (Stefan, 2014). A discussion on virtual labs is beyond the scope of this paper, leaving the development of the LMN to be presented here, starting with a survey of the literature on potential applications of cloud notebooks in different scenarios.

LITERATURE SURVEY

When cloud notebooks were first introduced, they were designed for simple note-taking applications. Their use in education became widespread as notebook software evolved to take advantage of the collaboration features of cloud computing across multiple devices and users. Numerous scholarly articles have since been published exploring the potential applications of notebook software such OneNote in teaching, including a graduate thesis that evaluated, in detail, the use of OneNote in a secondary school (Patchigalla, 2019).

Among the early adopters of cloud notebooks in higher education were those involved in teaching laboratory classes. A number of articles have highlighted the usefulness of OneNote as an Electronic Laboratory Notebook (ELN) (Bertram, 2019). OneNote as an ELN can be adopted for both scientific and nonscientific applications (Guerrero, López-Cortés, García-Cárdenas, Saa P, Indacochea, Armendáriz-Castillo, Zambrano, Yumiceba, Pérez-Villa, Guevara-Ramírez, Moscoso-Zea, Paredes, Leone Paola & Paz-Y-Miño, 2019). Extensive research and user study on the adoption of ELN has shown that an ELN built upon a pre-existing cloud notebook platform can help overcome the barriers to the adoption of ELN (Kanza, Willoughby, Gibbins, Whitby, Graham, Erjavec, Zupančič, Hren & Kovač, 2017). The barriers cited were the cost of currently available ELNs, their ease of use, and their accessibility across different devices and operating systems.

In a detailed study exploring the effectiveness of OneNote, multimedia course contents were distributed in a OneNote class notebook to be utilized by the students and faculty members for collaboration (Campbell, Wilson & Olson, 2017). In this study, the students were surveyed on the use and acceptability of the OneNote-based learning platform. The results demonstrated that although the students were initially skeptical of using a university mandated electronic resource such as a note-taking tool, many reported increased efficiency and better organization of their studying habits (Campbell et al., 2017).

As the studies confirm, there are many reasons for using cloud notebooks to support teaching and learning. For example, notebooks allow documents to be organized in a structured manner and annotations to be easily added. Links to Web sites can be included and accessed on the fly, and clippings from external programs can be inserted with ease (Tofan, 2018). OneNote, for instance, excels in being able to incorporate multimedia modules in its notebook pages. Embedding the modules in a notebook page is easier than incorporating them in a typical LMS. Multimedia capabilities of notebooks allow for the inclusion of cases, articles, videos, files, and webpage clips in them that further enhances the learning experience of students (Calle, Bonfante-Mejia1 & Riascos, 2019).

When used in conjunction with other cloud resources such as SharePoint or OneDrive, OneNote can be used to create a fast, flexible and user-friendly collaborative workspace that carries a low training burden (Barber, Haque, & Gardner, 2009). OneNote's collaboration capabilities can be expanded further with Microsoft Teams enabling students working in groups to be assigned specific tasks and due dates, and the lecturer to view the progress of each group to be able to provide feedback online (Wajrak, 2019). According to Wikipedia, Microsoft Teams is defined as a unified communication and collaboration platform that combines persistent workplace chat, video meetings, file storage (including collaboration on files), and application integration (Wikipedia, 2019).

The overall picture that emerged from the survey of the literature was that OneNote, when used in conjunction with other services such Microsoft OneDrive/SharePoint and Microsoft Teams, and a tablet computer can help create a flexible and easy to navigate learning environment that is conducive to teaching, learning, and collaboration. Although the articles surveyed highlighted the many useful features and attributes of OneNote and its varied applications in education, none have presented a systematic approach to developing a OneNote-based learning platform that could be used as a substitute or a replacement for an LMS. As such, this paper and the accompanying discussion on LMN serve a unique purpose.

EVOLUTION OF THE E-LEARNING PLATFORM

The LMN presented here represents the current stage of an evolving e-learning platform that initially started with the deployment of a stand-alone course website. Table 1 lists the various stages of the development of the learning platform. The earlier stages of development have been chronicled elsewhere (Ganesan, 2013; Ganesan 2012). Prior to the development of the LMN, the instructional materials consisting of PowerPoint slides, Word documents, multimedia modules, and audio reviews were stored in Google Drive and accessed via a course website designed using Google Sites. In the current LMN, the website has been replaced by a set of OneNote notebooks stored in the cloud, and the course materials have been moved from Google Docs to OneDrive. The reasons for choosing OneNote and OneDrive as the development and hosting platforms are discussed in the following section.

Table 1. Evolution of the E-Learning Portal

LMS Hosting Platform	Software and Services Used	Responsibilities	Location
Local webserver	Windows Server, Internet Information Server, FrontPage	Implement and maintain both servers locally, design the course website using FrontPage and store course materials on local servers	On-site

University webserver	Apache Server, FrontPage, FileZilla	Design the course website using FrontPage and upload the site and course materials to Apache using FileZilla	On-site
University LMS	Moodle	Use Moodle to configure the user interface to access course-related information and upload course materials to Moodle	Private Cloud
Cloud-based website and storage	Google Sites, Google Drive, YouTube	Design the course website using Google Sites and store the course materials on Google Drive and YouTube	Public Cloud
Cloud-based notebook and storage	OneNote and OneDrive	Design the user interface using OneNote and store the course materials on OneDrive	Public Cloud
Multiple cloud resources that support extensive collaboration Features (Future)	OneNote, OneDrive, Teams, and Zoom.	Use OneNote as the gateway to course materials, store materials on OneDrive, and develop a platform for collaboration using Teams and Zoom.	Public Cloud

CHOOSING A DEVELOPMENT PLATFORM FOR THE LMN

When cloud notebooks were initially being explored as a possible hosting platform for the LMN, only a few cloud notebooks were available in the market. The three prominent cloud notebooks at that time were Evernote, Google Keep, and Microsoft OneNote. Although other cloud notebooks have since appeared on the scene, all three notebooks remain as leaders in the field of notebook software (Moreau, 2019). Among them, Google Keep was initially considered for the development of the LMN since the course materials were already stored on Google Drive. However, after reviewing Google Keep, OneNote, and Evernote, OneNote was chosen for the following reasons.

First and foremost, OneNote is intuitive to use since it mimics the user interface of a traditional notebook that is familiar to students from the very early days of their schooling. Studies have also shown that OneNote has features that are conducive to traditional notetaking and learning that further enhances its usefulness as a learning tool (Dieck-Assad, 2018). Others have also found OneNote to be the notebook software of choice in an academic environment (Guerrero et al., 2019). Moreover, a special version of OneNote, known as OneNote Class Notebook, is available to expand the functionality and features of the proposed LMN, if needed.

Another reason for preferring OneNote over the other notebook software is that OneNote is tightly integrated with Office 365, the software suite that is widely used for creating documents and presentations. Also, Microsoft OneNote can readily be integrated with a cloud service such as Microsoft Teams for creating effective online classroom space for collaboration. Being able to seamlessly integrate OneNote with other services was yet another compelling reason for choosing OneDrive to complement OneNote as the cloud storage service. Having chosen the development platform, the next step was to configure an appropriate user interface using OneNote.

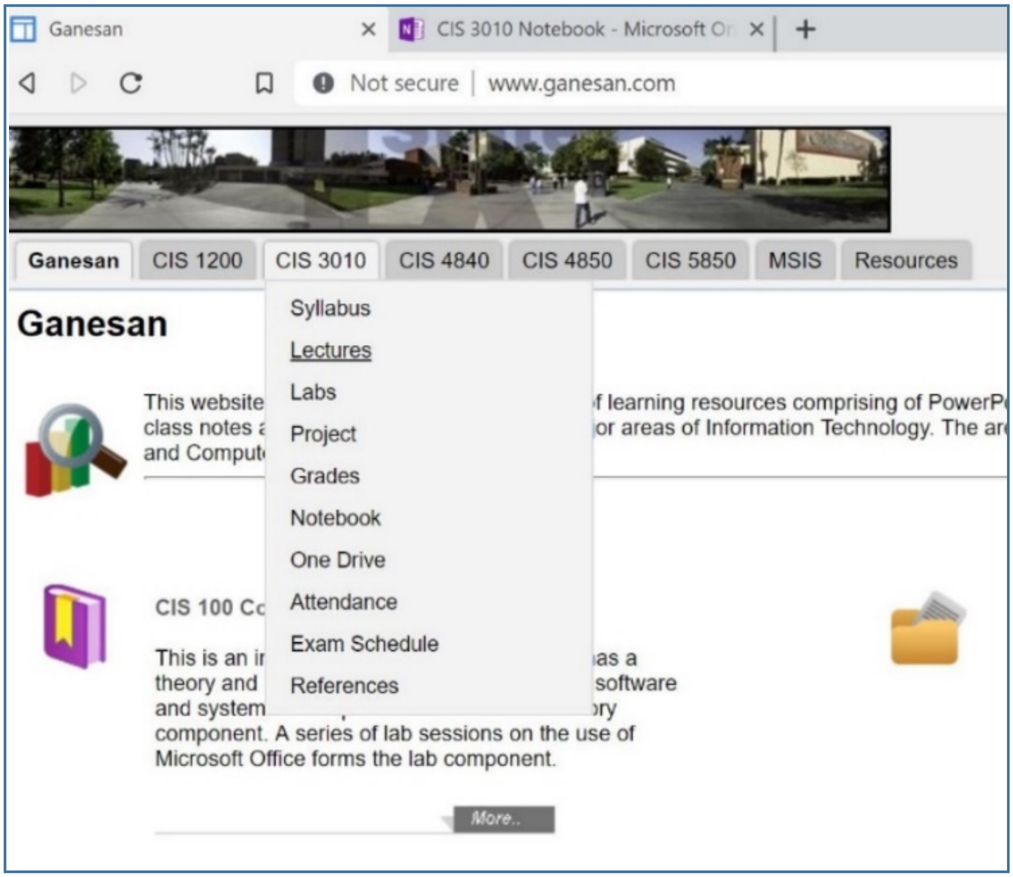
EVOLUTION OF THE USER INTERFACE

The structure of the user interface evolved over time, beginning with the initial development of the course website. It was refined after reviewing the course structure of several popular online courses. In particular, the courses offered by leading MOOCs (Massive Open Online Courses) providers such as Coursera, EdX, and Udemy were examined to arrive at a user interface that was simple to comprehend, but effective at providing easy access to the most frequently retrieved information by the students. For the most part, a common user interface prevailed across the courses offered by the MOOCs providers that constituted the following:

- Course syllabus
- Outline of weekly coverage consisting of Slides, Videos, Reading Assignments, Exercises, and Quizzes applicable to each week
- Course materials stored in the form of PowerPoint slides, Word documents, pdf documents, video modules, and audio modules
- Reference material presented as pdf documents or as links to webpages
- Quizzes and homework assignments
- Project-related information, if projects are assigned as part of the course
- Discussion forums
- Contact and other general information

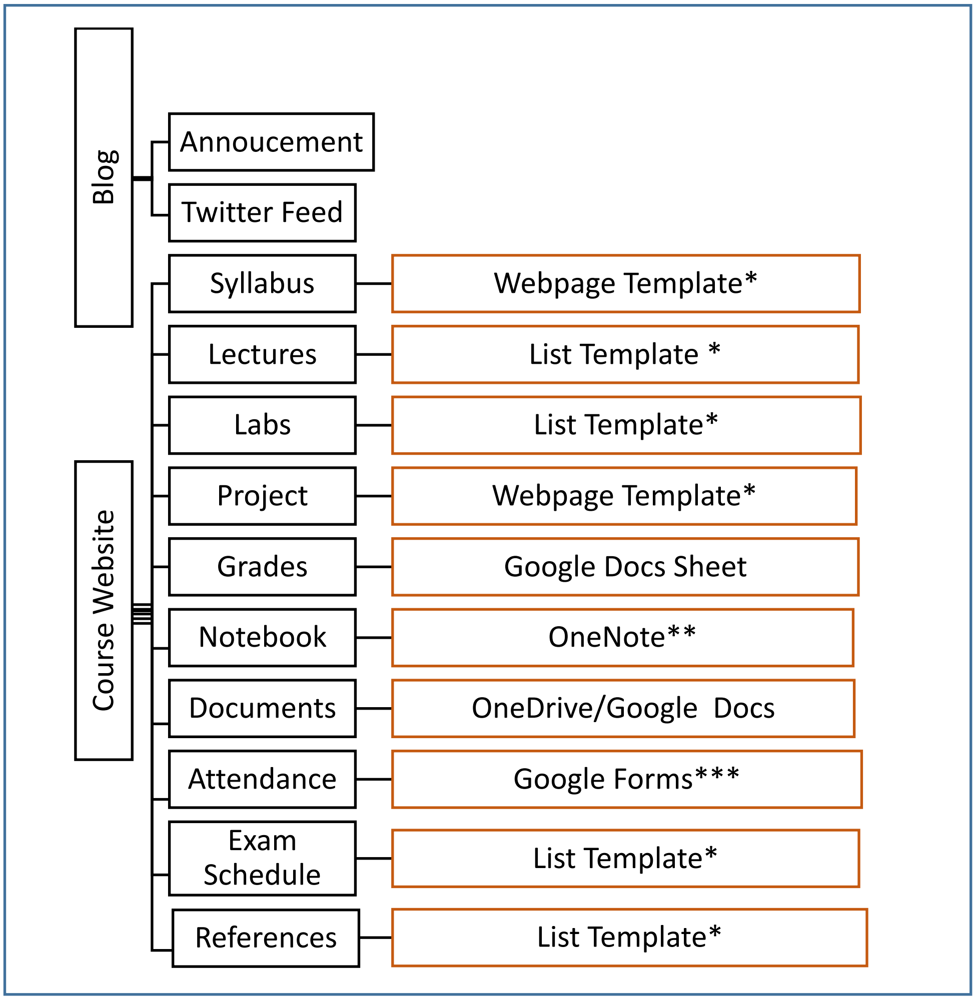
As the course website was primarily intended to support face-to-face and hybrid classes, discussion forums and quizzes were considered to be in-class activities and were not included in the user interface. The rest were incorporated in the user interface of the course website as shown in Figure 1. The interface presented represents the class entitled CIS 3010 Management Information Systems which is one of the five courses originally hosted on the course website. Being a common core course in the Business curriculum, CIS 3010 was chosen as an appropriate example to be used throughout this paper to explain the mapping of the user interface to the LMN.

Figure 1. Website User Interface for CIS 3010



In the earlier course website, webpages corresponding to the different links in the drop-down menu, shown in Figure 1, were created to access the course syllabus, course materials, exam related information, project details, and references. Together, they represented the frequently accessed pages from a typical LMS. Different pages on the website were created using different templates available in Google Sites. Figure 2 summarizes and shows the webpages created, the templates used for creating the webpages, and the links that interconnected the pages on the website. Using these templates, a comprehensive course website was developed and implemented without having to write any code at all.

Figure 2. Site Map for the Course Website



* Google Sites templates used.
** This link was introduced after the development of the notebooks to facilitate access to the notebooks.
*** Google Forms is a separate feature of Google Docs that is not part of the templates in Google Sites.

MAPPING OF THE COURSE WEBSITE ONTO CLOUD NOTEBOOKS

As the next step, the webpages and navigation links shown in Figure 2 were mapped onto the notebook pages and tabs respectively. For each course, a separate notebook was created to map the course contents. Figure 3 shows the structure of the notebook created to map the course contents of CIS 3010. The first tab in the notebook pointed to a page containing the syllabus and the office hours. A screenshot of this page is included in Appendix A. The second tab, shown in Figure 4, pointed to the Weekly Coverage. Under this tab, links were created to access various course materials that included slides and multimedia instructional modules stored on OneDrive (Ganesan, 2009; Ganesan, 2007).

Figure 3. Class Notebook Structure

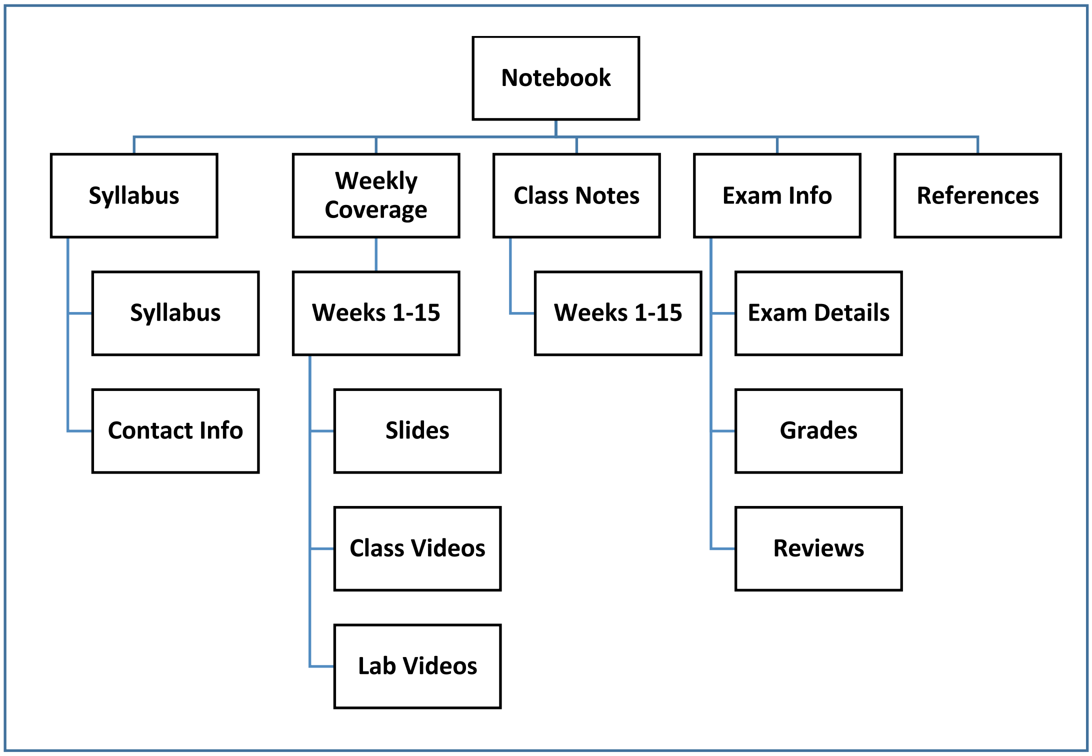
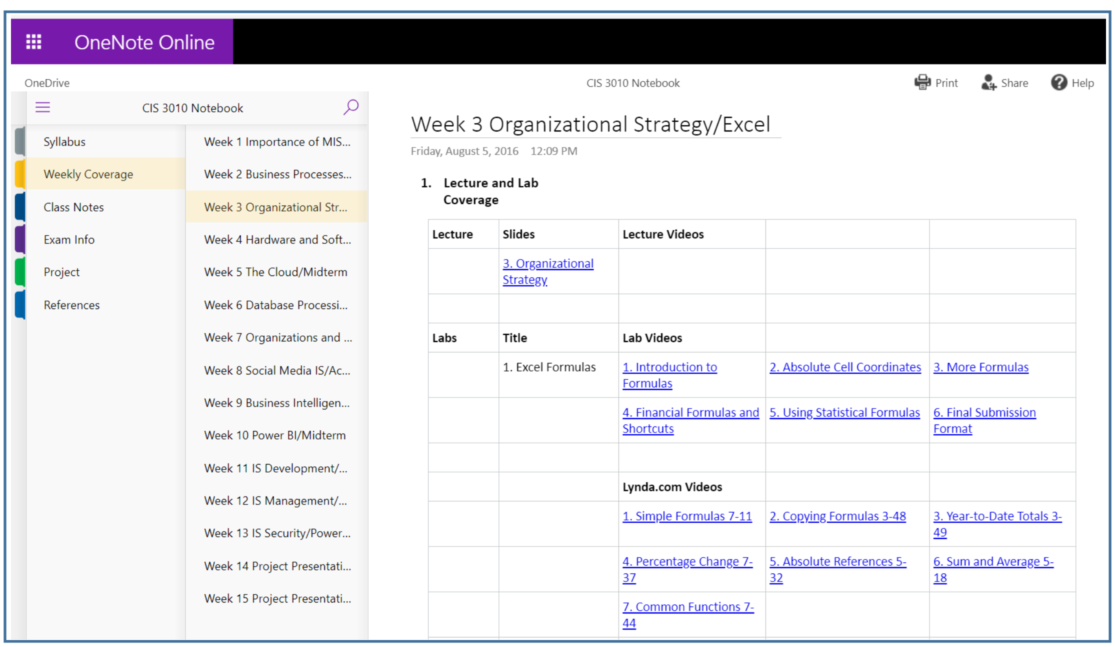


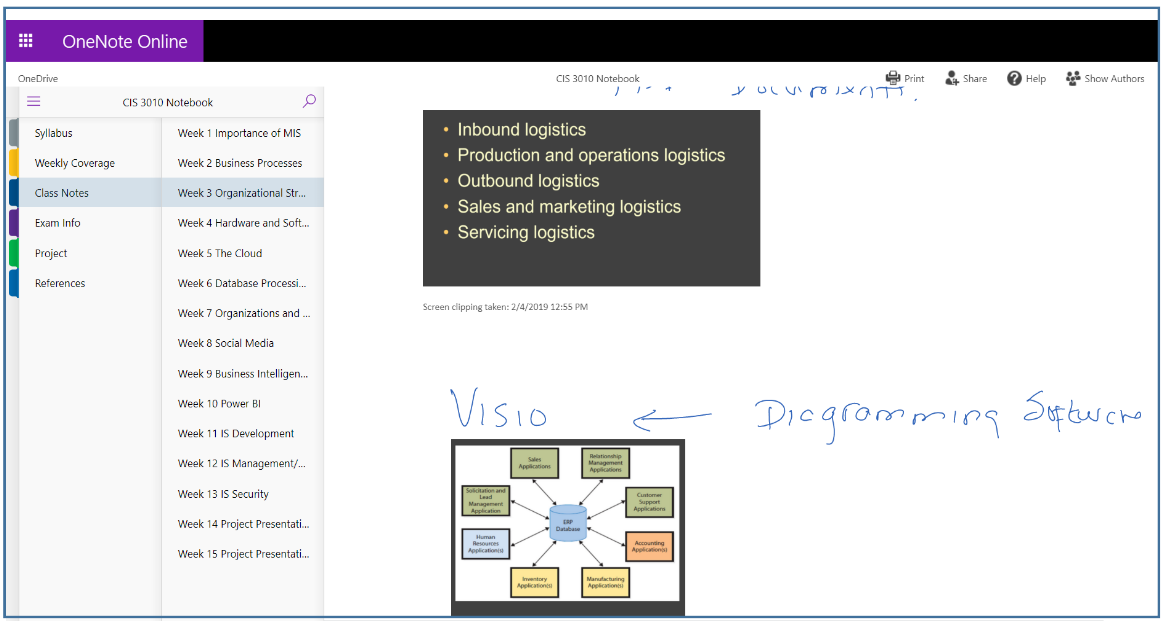
Figure 4. Week 3 Weekly Coverage



The third tab in the notebook pointed to the page entitled Class Notes that was used for writing notes during a lecture. The Class Notes page served the added purpose of emulating a cost-effective whiteboard for writing, storing, and retrieving handwritten notes when the notes were written on a tablet computer and projected on to a screen. Others have also noted that, when used with a tablet PC and a stylus, OneNote can be effective in eliminating the need for blackboards, whiteboards, or other presentation software for writing and displaying hand-written notes (Tofan, 2018). Moreover, the notes stored on the Class Notes pages can be accessed by the students for later reference.

If required, the handwritten notes can be converted to typed notes by the ink-to-text conversion feature supported in OneNote. Also, images, audio clips, and video modules can be embedded in a notebook page thus enabling the page to effectively serve as a repository for multimedia learning resources. Other than multimedia modules, real-time screen images can be captured with ease and stored on a notebook page using the screen capture option provided in OneNote. Figure 5 shows a Class Notes page containing handwritten notes and a diagram captured during a lecture. The on-the-fly screen capture feature of OneNote was found to be very helpful in capturing and storing screen images such as, for example, the screenshot of a webpage referenced during a lecture.

Figure 5. Class Notes Captured and Stored in Class Notes Page



Another advantage of using the notebook as a whiteboard is that the students seated at the back of a classroom can view the projected screen by opening the notebook page on a computer in front of them since the notebook page is shared over the Internet and displayed in real-time. The option to view the Class Notes page in real-time could be beneficial if the course is to be streamed online using Zoom, for example, to the students who are unable to attend the class. In this case, a microphone and a camera are the only additional hardware required to turn the LMN into a platform for delivering synchronous online instruction (Ganesan, 2007).

Finally, in addition to the tabs discussed in this section, a few other tabs were created to present exam related information, project details, and an expanded list of references. Screenshots of notebook pages corresponding to the tabs that provide information on the exam and project are included in Appendix B and Appendix C respectively. These pages shown in the appendices along with the other pages discussed in this section constitute the overall design of the LMN with the exception of the pages required for managing attendance and administering examinations.

ATTENDANCE MANAGEMENT AND ADMINISTRATION OF EXAMINATIONS

Both attendance management and the administration of exams or quizzes can be implemented and managed using the Forms software that is part of the Office 365 suite of software. A screenshot of a form created to manage attendance is included in Appendix D. The data on student attendance obtained through this form is stored in a spreadsheet enabling the data to be analyzed later. As for the exams and quizzes, Google Form that was used in the previous course website to create online quizzes can still be used to create and administer the quizzes. In this case, an add-on known as Flubaroo can be employed to grade the quizzes automatically.

On the other hand, the quizzes can also be created and managed using the Forms software which is a component of Office 365. If more advanced features are needed, there are several online quiz-making software available for creating and administering the quizzes and linking them to the notebook (Winsted, 2020). Since the LMN discussed here is intended for in-class and hybrid courses, paper-based quizzes and examinations were reinstated to ensure proper monitoring of the tests. As such, the quizzes and exams were neither conducted online nor included in the LMN.

CLOUD STORAGE AND SYNCHRONIZATION

One of the important advantages of the LMN discussed in the previous sections is the synchronization of notebooks across multiple devices such as tablets, desktops, laptops, and smartphones. When an LMN is created, the master copy of the LMN is stored in the cloud with a local copy stored on the local device. Both copies remain synchronized at all times. If desired, the notebooks can be copied and synchronized across multiple devices such as a home computer, an office computer, and a laptop computer.

The synchronization of notebooks automatically updates all the copies of a notebook stored on different devices thus providing an additional layer of protection against the loss of data. Another advantage of synchronization is that, by using the local copy of an LMN, a course can be taught even when there is an interruption in the Internet connection. In this case, as soon as the Internet connection is reestablished, the edited notebook on the local computer is automatically synchronized across all the devices through the master copy of the notebook stored in the cloud. This will ensure that the copies of notebooks stored on different devices remain updated in a timely manner.

Also, when the single sign-on option is used to log into a local device, the user is authenticated to access not only the local storage space but also the cloud storage space that is mapped to the local computer. As a result, the LMN can be opened directly from the local drive of a device without having to additionally log into a cloud service. The same applies to the course materials as well. As such, the notebook and the courser materials stored in the cloud appear to the instructor as files stored natively on the local computer. Moreover, a fringe benefit of synchronizing the files and notebooks across all devices is that, when an old computer is replaced with a new computer, the notebooks and the course materials are automatically copied to the new computer, provided the single sign-on option is adopted and chosen to log into the computer.

OTHER ADVANTAGES

In addition to the advantages of synchronization and the single sign-on feature discussed, there are also other advantages of using a cloud notebook to design and implement an LMN. Notebook pages, for example, can easily be updated in real-time similar to updating a page in a word processor. A separate web server or a streaming server is not required to stream the multimedia modules embedded in the notebook pages since OneDrive, by default, will stream the modules. Notebook pages stored on OneNote can also be selectively shared among and with students for such purposes as starting a discussion forum. Announcements, on the other hand, are easier to post on a notebook page compared to creating a separate blog for that purpose.

Equally important is the fact that OneDrive and OneNote are available free-of-charge by registering for a personal account with Microsoft. For most applications, the free and private account offered by Microsoft is adequate to implement the notebook based LMS. Many colleges subscribe to Office 365 thus making OneNote and OneDrive with additional features freely available to faculty members and students. The caveat on using the account provided by a school is that the students will lose access to the LMN and course materials once they graduate from the school or complete a particular course.

Overall, a cloud-based LMS such as the proposed LMN offers many advantages that include low implementation cost, instant updating of cloud software, improved compatibility with different document formats, and better information security (Ghazal, 2015). Moreover, the ease of use and the usefulness of cloud-based file hosting services are perceived to be higher by students when compared to traditional LMS tools and services (Stantchev, Colomo-Palacious, Soto-Acosta & Misra, 2014).

EXPANDING THE SCOPE OF THE LMN

Given the advantages discussed in the previous section, the LMN can be a viable choice as a learning platform, especially when only the most frequently used features of a typical LMS are needed and used by an instructor. If advanced features are required, the scope of the LMN can be extended further by using a special type of notebook known as the Class Notebook. It is a free add-on module available for OneNote.

A Class Notebook has three components, a Content Library, a Student Notebook, and a Collaboration Space (Microsoft, 2019). Each one is a notebook by itself, but with different features and functionalities to serve different purposes. The Content Library could be considered as a sub-notebook, created within the parent notebook, for sharing course materials such as syllabi, Word documents, PowerPoint slides, etc. with the students. This notebook can be viewed and edited by the instructor. The students can only view the notebook.

A Student Notebook, on the other hand, is created for each student in the class to be shared between an individual student and the instructor. Only the student concerned and the instructor are allowed to view and edit this personal notebook. A student can use this notebook to submit assignments while the instructor can access the notebook to correct the assignments and provide feedback. The third and last sub-notebook, known as Collaboration Space, is created to facilitate collaboration among all the constituents of a class that include the students and the instructor. A typical use of this space would be to host a discussion board. Both the students and the instructor can view and edit the contents of this notebook.

Since the LMN presented in this paper is intended for face-to-face and hybrid classes, the Class Notebook add-on was not used. The decision for not upgrading to a Class Notebook, at this time, was partly influenced by the need to keep the LMN simple to use, navigate, and manage. The Class Notebook that has its own applications, strengths, and advantages is nevertheless mentioned in this paper simply to highlight the possibility of expanding the scope and functionality of the proposed LMN.

SHORTCOMINGS OF THE LMN

While the proposed LMN with all the basic and extended features discussed can serve a multitude of purposes, there are still certain limitations associated with the LMN when compared to a traditional LMS such as Canvas. The three main limitations are as follows:

- Course Analytics: This is a useful feature supported by an LMS such as Canvas that is not available in the proposed LMN. Course analytics is intended to provide the instructor with useful student related statistics such as page views, student participation, assignment submission rates, etc.

- Integration with SIS: The integration of an LMS with a Student Information System (SIS) for importing student data into an LMS is a very useful feature supported in most traditional LMSs. Importing student information is probably easier with a traditional LMS than with an LMN. However, student data can still be imported into the LMN if it is used in conjunction with a cloud service such as Teams. In this case, Teams must be linked to the directory system and the SIS of the institution to be able to transfer the data.

- Integration with External Apps: There are certain learning-related applications such as WebAssign, iClicker, and Examity that can easily be integrated with a traditional LMS such as Canvas. This is not the case with OneNote. Although the number of applications that can be integrated with OneNote continues to grow at the time of this article being written, only a few popular third-party applications such as Turnitin can be easily integrated with OneNote. Applications such as Respondus, a popular lockdown browser used for securing online quiz-taking, are yet to be integrated with OneNote.

CONCLUSION

Finally, it is reasonable to conclude that only a few of the numerous features listed in the 3847-page Canvas user manual (Canvas, 2019) is likely to be used by most instructors. An LMN developed with readily available and affordable cloud resources can easily support these frequently used features of a traditional LMS without the added complexity and learning curve associated with most LMSs. The proposed LMN, therefore, can be an attractive alternative to a traditional LMS since the former is capable of supporting the following LMS features that are considered to be the mainstay of mainstream LMSs such as Canvas (Middlebury, 2019).

- Conduct online, asynchronous discussions with your students
- Collect assignments, provide feedback, and post grades
- Post web links
- Upload documents, videos, audio files, and more
- Post deadlines and reminders through calendar and announcements
- Manage group work assignments
- Integrate video conferencing with individual students, a whole class, or guest speakers
- Communicate easily with the whole class, specific groups, or individual students.

Although some of the above features may require the implementation of the Class Notebook mentioned, the LMN that was developed and deployed has provided a flexible and cost-effective learning environment to a diverse body of students. It has also helped transcend the temporal and spatial limitations of a traditional classroom. Equally important is the fact that the LMN introduced the students to several cloud technologies including the ones used for collaboration. These are most likely the same technologies the students may encounter at their future place of employment.

In conclusion, it is compelling to note that, with the increasing number of cloud apps and services, one can design, develop and host a fully functional and customizable LMS with minimum programming experience and inexpensive resources. For those of us who are constrained by the structure of a traditional LMS and not inclined to use all of its features, there is now a real choice between a traditional LMS such as Canvas or Moodle, and a personalized and customizable LMS/e-portal such as the LMN discussed in this paper. The choice probably applies to many instructors in most colleges.

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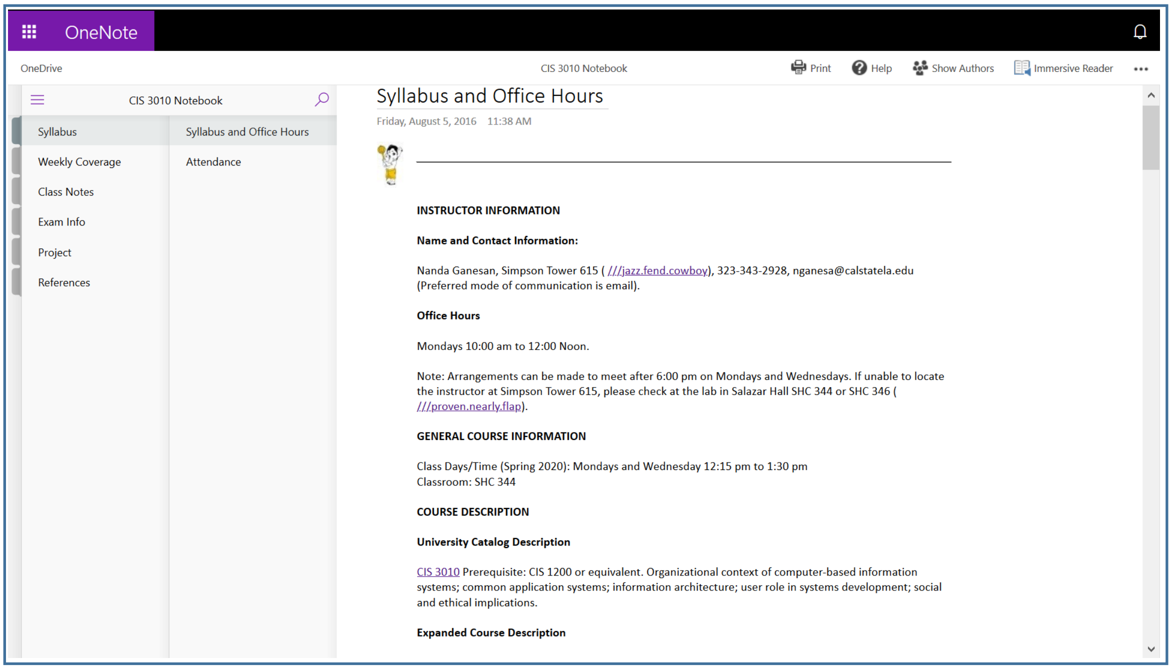
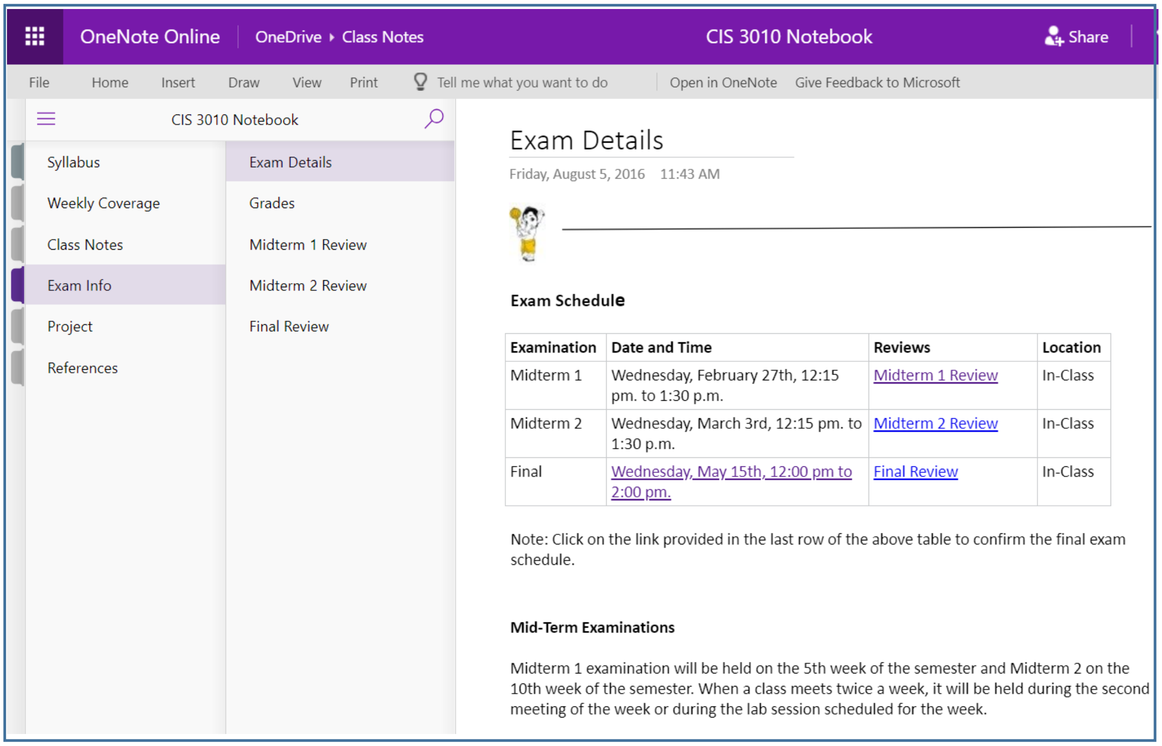
APPENDIX A: TAB 1 SYLLABUS AND OFFICE HOURS

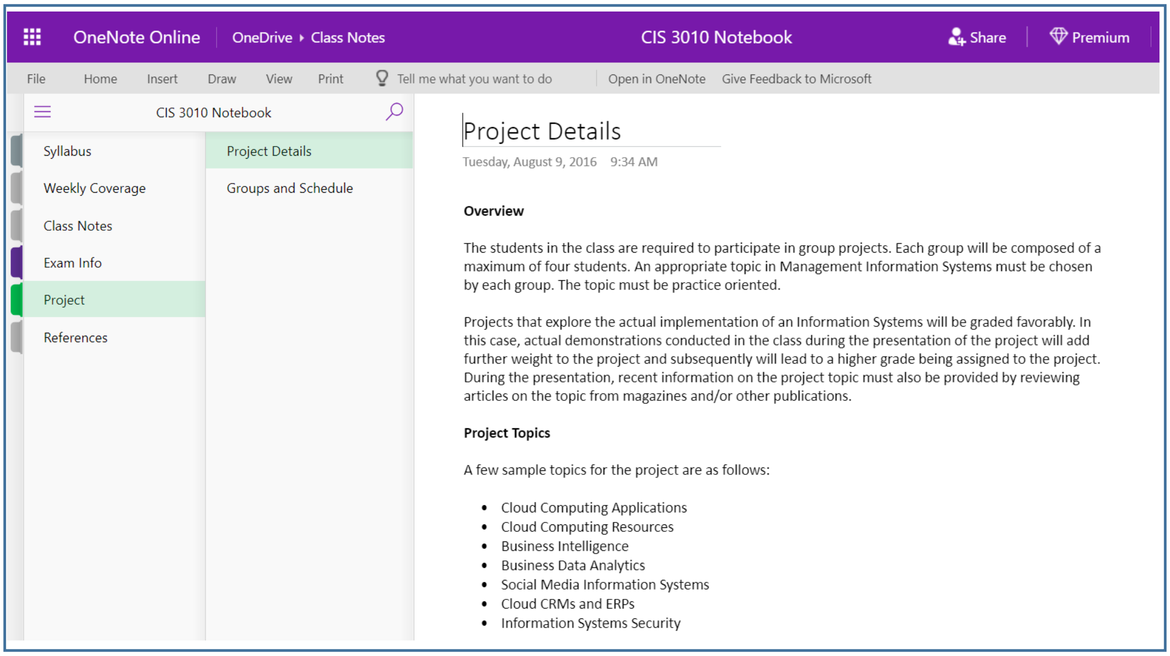


APPENDIX B TAB 4 EXAMINATION DETAILS



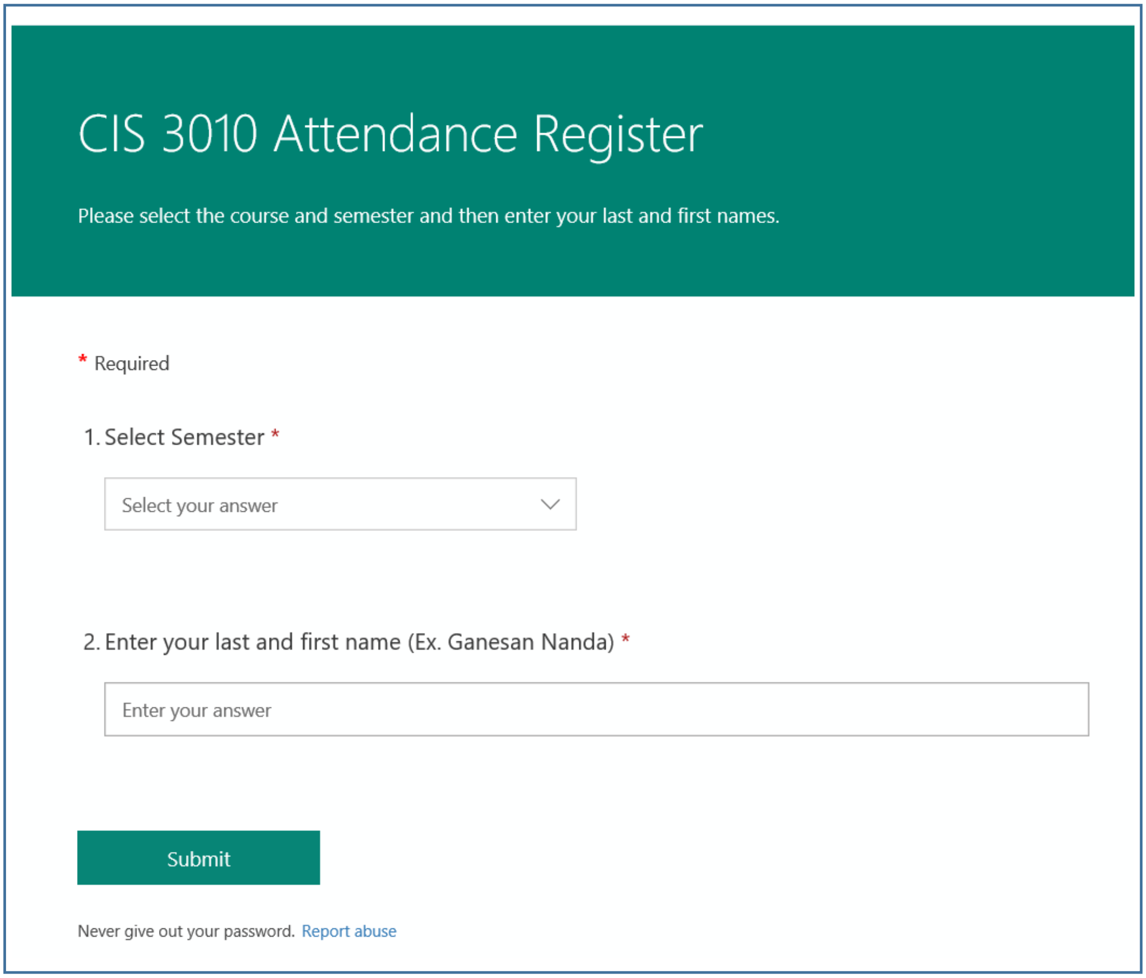
<u>Tab 4 - Exam Info:</u> Examination being one of the topics of keen interest to the students, a separate tab was created for providing exam-related information. Under this tab, multiple notebook pages were created to provide an overview of the exam, a list of topics covered in each exam, audio and written reviews for the exams, and graphs showing the distribution of the grades among the students. The students found the detailed instructions provided under this tab, especially the reviews, exam schedules, and grade distributions to be helpful in preparing for the examinations and assessing their progress in the class.

APPENDIX C: TAB 5 PROJECT DETAILS



Tab 5 - Project: Yet another frequently discussed topic in the class is the class Project. The above page was created to provide detailed information on the requirements for the class project. A description of the project, sample project topics, references to help choose an appropriate topic for the project, the format of the project report, a template for the project presentation slides, and a table with group assignments and presentation dates are displayed under this tab. The students were requested to create their own OneDrive accounts to store their presentations and share them with the instructor and their group members. By requesting the students to store and manage their presentations on a cloud-platform designed for collaboration, the students were invariably being exposed to the use of cloud services for real-time collaboration.

APPENDIX D: ATTENDANCE FORM DESIGNED USING FORMS



CIS 3010 Attendance Register

Please select the course and semester and then enter your last and first names.

* Required

1. Select Semester *

Select your answer

2. Enter your last and first name (Ex. Ganesan Nanda) *

Enter your answer

Submit

Never give out your password. Report abuse

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DIGITALIZATION AS ENABLER FOR A HOLISTIC CORPORATE PERFORMANCE MANAGEMENT

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ABSTRACT

A holistic approach to digitization enables decision-makers to achieve new efficiency in corporate performance management. The digitalization improves the quality, validity and speed of information retrieval and processing. At present, most corporations are confronted with the problem of not being able to organize, categorize and visualize decision-relevant information. To meet the challenges of information management, the Management Cockpit provides an information center for managers. In accordance with the specific working environment of the executives, the Management Cockpit offers a quick and comprehensive overview of the company's situation. Today, the current situation of a company is no longer only influenced by internal factors, but also by its public image. Social media monitoring and analysis is therefore a crucial component for the external factors of successful management. Real-time monitoring of the emotions and behaviors of consumers and customers thus contributes to effective controlling of all business areas. The intelligent factories promise to collect data for internal factors, but the current reality in manufacturing looks different. Production often consists of a large number of different machines, with varying degrees of digitization and limited sensor data availability. In order to close this gap, we developed a compact sensor board with network components, which allows a flexible design with different sensors for a wide variety of applications. The sensor data enable decision makers to adapt the supply chain based on their internal and external observations in the Management Cockpit. Due to the realtime- and long-term monitoring and analytic possibilities the Management Cockpit provides a multi-dimensional view of the company and supports an holistic Corporate Performance Management.

Keywords: Corporate Performance Management; Management Cockpit; Decision Making; Data mining

INTRODUCTION

In order to remain competitive in the long term, companies need to use different concepts to reduce costs and maximize the utilization of available resources. For this purpose, individual performance management tailored to the company is frequently used, in which different management concepts can be applied with separate instruments, tools, processes and systems. Problematic, is that the used instruments have not been planned strategically or systematically, instead they have grown historically from many individual decisions within the different departments. As a result, data and information from different systems with various technical and methodological backgrounds are collected and presented in the management reports. In order to be able to make strategic decisions on the basis of this data, the reports must be carefully evaluated by questionnaires and clarifications in an attempt to achieve the necessary transparency. Accordingly, the investigation of these reports may lead to further delays in the decision-making process. Furthermore, due to the inaccuracy or transparency, critical decisions can be made on the basis of a lack of interpretation or critical circumstances discovered at a late stage. To counteract these consequences, there must be increased transparency in the processes and process flows and thus a more efficient use of operational resources. Corporate Performance Management (CPM) is a defined generic term that describes all methods, processes, systems and metrices that can be used to monitor, measure and control the business development of a company (Geishecker, 2002). CPM thus describes various implementations of management processes and business methods that systematically improve the strategy of organizations. For optimum benefit, CPM must take a holistic view of the company and all other data that have an impact on the organization. Especially in the age of digitization, decision-relevant information can be procured digitally in order to be processed, analyzed and distributed faster.

KEY TERMS AND DEFINITIONS

In order to fully exploit all possibilities, companies must be able to handle the ongoing process of change that the digital age brings with it. In particular, the procurement and processing of information with the help of digital technologies or applications should be focused within the scope of corporate management to be able to make full use of exploitation potential.

Digital Transformation

The term "digital transformation" was already introduced at the end of the 1990s and has today again initiated a new trend for increasing digitization in the economy (BMWi. 2017). Digitalization improves the quality, validity and speed of information acquisition and processing. By considering the aspect of digitization in CPM, a holistic approach to digitization specifically enables a new efficiency for the decision makers. This promises to drive new innovations, increase efficiency and improve services (BMWi. 2017). Nevertheless, in addition to many advantages, problems arise such as the organization, categorization and visualization of decision-relevant information, which many companies cannot cope with due to the high amount of data. In addition to the pure consideration of data problems, the handling of new opportunities arising from every technological change requires the corresponding competencies of the employees in order to fully exploit the potential of a company. The technology must be added to the tasks of the highly and low-skilled workers, which can lead to a shift in the required qualifications (Acemoglu, Autor, 2011). This results in a complementarity between technology and qualification, in which a direct dependency exists on both sides. Thus, the individual and organizational competencies can be regarded as a resource that provides competitive and productivity advantages in addition to the technological state of a company.

Information systems for management

Qualitative information can improve the decision-making of managers or executives in companies. This is the reason, why they regularly look for as much information as possible to fulfill their various management tasks (Lueg, 2001). A variety of different information resources such as print media and online data sources are used for this purpose. The information provides different perspectives on customers, competitors, market development and legislation from the internal and external environment (Shahriza Abdul Karim, 2004).To meet the challenges of information management, the Management Cockpit offers an information centre for managers. According to the specific work environment of the managers, the Management Cockpit offers the possibility to get a quick and comprehensive overview of the situation of the company. Real-time monitoring of consumer and customer behavior contributes to effective controlling in all business areas.

Enterprise Social Media & Social Media

By networking within an Enterprise Social Media (ESM) each employee is able to achieve an additional increase in his personal qualifications by exchanging knowledge with other participants (Kane, 2015). The knowledge exchange is facilitated by an interactive environment that allows employees to send direct messages, texts and files to specific employees or post them to the organization via web-based platforms (Leonardi et al., 2013). Another added value for companies using ESM is the new self-marketing and relationship building opportunities that can have a direct impact on the socialization of new employees and through active participation can lead to a stronger sense of community and commitment. For the assessment of the current situation of a company, however, it is not sufficient to consider the internal factors alone, but the image in the public must be taken into account. Real-time image measurement can be derived from social media data. Using social media data generated analysis, companies can better understand why customers buy a product or service and play an important role in securing competitive advantage (Brooks et al., 2014). Thus, social media monitoring and analysis is a decisive component as an external factor of successful management.

Cyber Physical Systems

The current management systems for production planning and execution are mainly based on static manufacturing information where decision-making processes are iterative (ElMaraghy, Nassehi, 2014).

The factors of production execution, such as changes in orders or priorities, environmental conditions and unexpected internal and external events are not taken into account. The consequences are unexpected interruptions, short-term repairs and long overdue maintenance during production operations with a waste of time, energy and resources (Wang et al., 2015). One solution for these problems is the Cyber Physical Systems (CPS), in which specific networked sensors provide their data in real time for evaluations for condition monitoring and diagnosis (Monostori et al., 2016). The use of sensors on machines does not yet represent an innovation or added value for the operating companies. Only when network components are used to network and transmit the data to the systems does this allow users a new data basis that can be used for decisions. It is important not to focus on individual production plants, rather to take a holistic view of all production resources that are directly or indirectly dependent on each other. It is therefore particularly important that data from all related production plants can be collected, condensed and analyzed. Unfortunately, the reality today in the manufacturing sector is very different. On average, less than a quarter of machines in Germany are connected to the Internet (Tropf, Zehl, 2018). Although the number of suppliers equipping their machines with additional sensors for monitoring and analysis is growing. These are usually only intended for the manufacturer himself and can usually not be viewed by the customer at all or only via proprietary software that does not permit further data transmission.

Internet of Things

The Internet of Things (IoT) describes the structure and interaction between sensors and actuators of physical objects connected to the Internet via wired or wireless communication (Atzori, Iera, Morabito, 2010). The use of IoT in production has encouraged the government of Germany to refer to the new possibilities as a new industrial revolution called Industry 4.0 and to initiate it (Shrouf, Ordieres, Miragliotta, 2014). In these IoT-based Smart Factories, production plants can be directly or indirectly equipped with sensors and provide their measured values via the network. This enables real-time recording and analysis of decision-relevant data of internal factors. However, the problem of the participation of different production plants in a production process with a different degree of digitization still remains. This results from the purchase of production machines, which involve high investment costs and are therefore designed for a long service life.

DESIGNING A HOLISTIC CPM

With a holistic CPM it is possible to integrate information into the operational process flows and to use corporate resources efficiently with regard to their use. The data can be collected, analyzed and checked for interconnection both internally and externally. As a result, CPM allows a company's methods, systems and processes to be viewed holistically and an optimal decision made on the basis of the underlying information. This is made possible by the conditions in the Management Cockpit, which allows the analysis and combination of a wide variety of data at a glance. On the one hand, this identifies possible correlations and on the other hand, new future states are simulated and visualized.

Figure 1. Layer-based architecture model for a holistic CPM

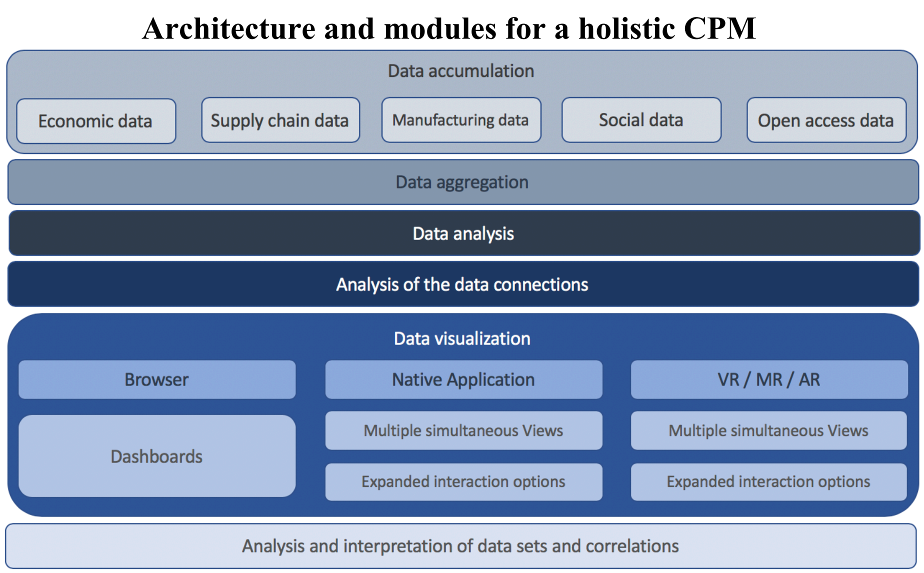


Figure 1 shows the architecture of holistic CPM. It describes the structure from data acquisition within the first layer to iterative data analysis and data visualization in the last layer. The individual layers will be discussed in the following subchapters.

Data accumulation

The Economic data describe all business data that can be read out of the own obtained operative information systems. A similar situation applies to the supply chain data. These also represent operational data that can be read directly from the information systems for the supply chain management (SCM). Manufacturing data are data sets that are provided by manufacturers to individual facilities in real time. By using IoT, machine data or data can be generated between the individual production steps and would therefore be a possible solution, since many manufacturers do not allow data access as already explained. The module Social Data describes the data that can be obtained from social media and enterprise social media. It should be taken into account that many perspectives on the company are considered, as well as Open Access Data allows.
Open Access Data describes all publicly accessible data that have a direct or indirect influence on a company's own performance. The data sources are dependent on the area of business field in which the company operates. As a result, competitive advantages can be secured and the competition identified early on, as important information regarding new products, developments, pricing, current topics or the presence of new market participants can be collected from public sources, such as a company's website. Different options can be used to collect and provide the data. Initially, the data can be procured and exchanged between interconnected actors via common software. The data can be displayed within the own software or made available via defined interfaces, also called APIs. Another alternative are self-developed web crawlers for individual websites. This allows to collect any number of information from a website and its links to be automatically called up, monitored and extracted to data sets.

Data aggregation

After the data has been retrieved, it must be stored persistently in databases. When selecting the database, the scope, the level of detail and the period must be taken into account. This allows to use the current and historical data for analysis and to show the changes based on data that serve as an additional source of information. To obtain a top down view for the management it is evident to aggregate the data in several views.

Data analysis

The data analysis describes the sole consideration of the data sets from the individual sources. The known business analysis methods can be used for the operational data. To this end, certain key performance indicators (KPIs) must first be defined and clearly specified. This is achieved through the creation of key figure profiles. These summarize the most important information on the individual KPIs. A further data analysis is defined under the heading "Social Media Monitoring", which means the continuous collection, the resulting evaluation and the presentation of user-generated content from various social media platforms. As a result, companies can observe which conversations are held by consumers about their own brand, products or even current topics. Particularly in data analysis, companies have the possibility to choose between different types of monitoring. In the case of strictly technical monitoring, the use of Social Media Monitoring Tools is limited, since an intellectual evaluation for the knowledge determination is completely abstained from. Possible applications are customer care, support, competitive observation, trend analyses or market analyses. These can have a high influence on the reputation management as well as on the image of the companies. Especially social media monitoring tools are used in this area to allow continuous observation. In the case of manual monitoring only, social media monitoring tools are not supported. In this process, user-generated information is searched for and evaluated manually, for example via a search engine. However, the problem is that due to the high amount of information, only a small fragment of the potentially important information can be accessed. For this reason, many companies use manual monitoring in addition to strictly technical monitoring to collect random sample analyses such as consumer opinions. In addition to the analysis of raw data from social media and enterprise social media, the data can also be used for a deeper analysis via text-mining applications to complement the sentiment analysis. The analysis of the data should then help to support management decisions, while taking the corporate strategy into account, and thus to manage the company successfully.

Analysis of the data connections

This module contains various applications and algorithms that can be automatically applied to the collected data sets. In contrast to the previous section, the focus of this module is not solely on viewing data sets from individual sources and their individual values, instead it focuses on recognizing predictions that only arise from viewing the relationships between data sets from different sources. For this task, machine learning can be used to identify automatically the potential connections, or algorithms that have been developed based on human understanding to recognize complex relationships. The ability to detect important correlations from different data is taken over by decision makers in the last section "Analysis and interpretation of data sets and correlations". If correlations have been found which can be processed by algorithms, this task is applied to the data sets in this section.

Data visualization

There are various options available for visualizing the data, but they all access the same data basis. Therefore, the question of the best type of visualization is not of fundamental importance, as each brings advantages and disadvantages and a combination should always be in the focus. In the browser, the information is visualized using dashboards, as the information can be divided thematically into individual dashboards. This type of visualization can be used in many ways, as only internet access is needed. Often small display areas are disadvantageous, because you have to change through many dashboards to get a holistic overview. Using a native application, a large number of display areas can be viewed at the same time. Navigation can be used for all display areas. In this way, individual displays can be changed at the simultaneously, but also over a large number of displays, if this corresponds to the context. If the social media data have been edited accordingly, however, they must be visualized in a management-oriented way for later analyses. Only in this way is it possible for the management to determine the corresponding corporate strategies. The Management Cockpit at Reutlingen University offers the ideal platform for this. Complex data can be visualized clearly for the management via a large number of monitors and beamers. Features such as touch-screen navigation and control by gesture allow data analysis and thus decision-making for all members of a meeting to become more interactive and clearly illustrated.

Analysis and interpretation of data sets and correlations

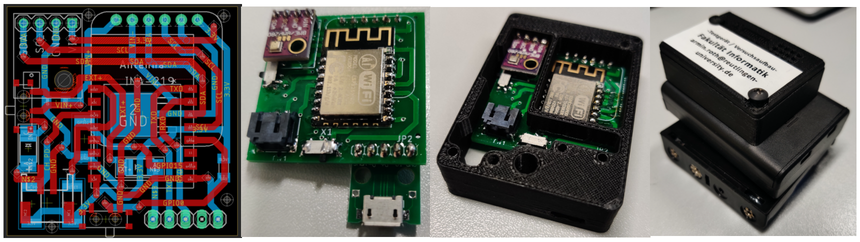
In this section, the decision-makers interpret the collected and processed data by use of the visualization section. As described at the beginning, it is not sufficient to consider individual data alone. For a holistic view it is necessary to identify and analyze the connections between the different data sets as well. Advantageous is a large variety of simultaneous views on the observable data sets and groups, so that correlations and patterns between the data, which are not recognizable by focusing on individual data groupings, can be identified. Thereby advantageous is a large variety of simultaneous views on the visible data sets and groups, as it is offered by the Management Cockpit (Roth, 2015), so that correlations which would not be recognizable on the view of individual groupings can be identified. The connections are transformed into algorithms and are integrated into the section "Analysis of the data connections" and form a permanent part of the data processing.

IMPLEMENTATION

To give a concrete picture of the methodology presented for comprehensive CPM, we describe in this section an implementation according to the model presented in the previous chapter for measuring manufacturing equipment, working environments and competitive analysis, which are used in addition to the data from the internal information systems. Since a competitive analysis can be carried out at different levels, a market definition by product, territory and customer segment is used.

In designing a sensor box for real-time data analysis of environments and manufacturing facilities, care has been taken to ensure simple usage without a deeper understanding of electrical engineering, so that the focus of users remains on data collection and analysis. As micro-controller, the ESP8266 was used, because it already has a built-in Wireless Local Area Network (WLAN). For the various applications, the developed code includes the modules BME280 (temperature, air pressure and humidity measurement), MMA8451 (acceleration sensor) and TSL2591 (brightness sensor), which can be connected to the PCB via the Inter-Integrated Circuit (I^2C) bus and can be activated or deactivated in the software, depending on the configuration, in order to cover the sensors that are often required. When using the developed sensor board, it is thus possible to set up the required configuration quickly for a production plant or a specific environment without having to carry out specific software development on the micro-controller. Further sensors can also be connected and integrated into the existing structure by further code development. The developed sensor board has a 2-sided PCB layout, is 2.5cm x 2.5cm in size and is installed in a 3-part 3d-printed housing. The modular housing design was used in order to make only individual part modifications according to the assembled sensor box configuration with an internal or external power supply. The finished sensor box is shown in the following figure.

Figure 2. Sensor box with schematic representation of the PCB, the manufactured board and in the assembled condition in the configuration with the BME280 sensor and 2 battery packs.



For the asynchronous acquisition of the sensor values the Message Queuing Telemetry Transport (MQTT) protocol with Mosquitto as broker was used. For message exchange, the broker provides queues that are subscribed by clients and thus receive new messages when they are sent to the queues. For the logic mapping, Node-RED was chosen to network the hardware devices and Application Programming Interfaces (API), since plug-ins allow the integration possibilities and functionalities to be expanded quickly. A Transport Layer Security (TLS) encryption with certificate was used for the encryption of the connection between the hardware for sensors and the broker, with an authentication of the server as well as the encryption of the sent messages from the sensor boxes.

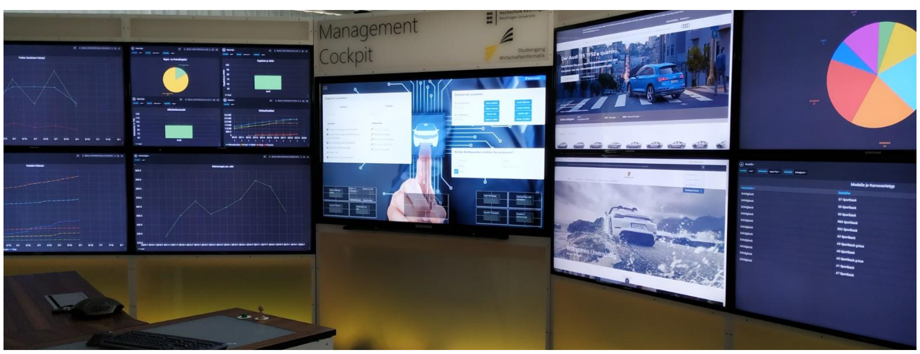
Relevant data from various sources were extracted for the competitive analysis. This data was collected from social media channels using APIs and Open Access data. The Open Access data represent publicly accessible data that is freely accessible via the Internet and can therefore also be captured automatically. For this purpose, information and documents from the websites were automated extracted using a developed web crawler and then archived. The Scrapy framework was used to extract the data from the web pages and the Camelot and tabula-py libraries were chosen to extract the data from the linked PDF-documents. The following three components with the associated questions were focused in the competitive analysis:

- KPI's of the companies - How are the companies generally positioned (e.g. how high are the sales figures, how high is the profit?)
- Product information - Which product strategy is used and which technologies do companies currently rely on?
- Market information - How are the companies positioned in a certain market (e.g. how high are the sales figures and how active are the companies in the social media?)

For the data archiving of the sensor values and the analyzed data the object-relational database system PostgreSQL was used and for the raw data archiving of the social media the NoSql database system MongoDB was employed. Analyses were made from the stored raw data using data mining and sentiment analysis.

During the development of the visualizations, the representation as web pages was chosen, since these offer a high reusability and adaptability. Thus the individual web pages can be used as reports and at the same time also for native applications with extended navigation functionality, in which the individual reports can be displayed distributed on monitors and provide information about the key figures at a glance. Reutlingen University's Management Cockpit (MC) with its large number of monitors offers optimal conditions for the presentation and evaluation of data. It has a large main screen with touch function as a central control environment and eight additional monitors for data visualization. The framework Electron, which is based on Chromium and Node.js, was chosen for embedding the web pages in a native application for the MC. With the help of these web technologies an execution on all browser compatible operating systems is possible. During the development for the MC it was considered that there is an additional control possibility so that data is always displayed for all views (one view describes in this context the individual view on a monitor) in the same period. In our implementation we have therefore designed the interaction with the web pages in such a way that they can all be called parameterized. As a result, competitors or sensor values and the comparison period for all open views can be defined together via the central control option. Further filtering and adjustment of the displayed data can still be carried out in the individual views. In order to keep the thematic constellations (i.e. the view of all active views in the MC) directly accessible, e.g. to be able to reopen the constellation with the latest data created for periodical meetings on a topic, a memory and call functionality for the constellations and the views was implemented. The last step involves the visualization of the information using middleware and the creation of a user interface to enable user-friendly navigation. The information is first displayed at a high level of abstraction and can then be analyzed in more detail with the typical OLAP (online analytical processing)- functions. This makes it possible to display diagrams in a simple and pre-structured way and to adapt them to requirements. A locally hosted version of the Grafana platform was chosen to display diagrams and graphics. Grafana can be used to query the databases. The results are then automatically converted into graphics. These graphics were displayed as native applications using Electron. The library D3JS was used for the graphic design of additional visualizations that could not be directly mapped from the database queries.

Figure 3. Developed competitive analysis application in the Management Cockpit



RESULTS

In the implementation we could show how a combination of soft- and hardware according to the presented model can be designed to enable a holistic CPM. By using Open Access data for competitive analysis, changes can be detected early on among competitors and used for the company's own goals. In addition to the use of real-time data, it also became apparent that the storage of competitors' historical data can also be an important basis for decision-making. Likewise, developments of new competitors with a low market volume and high growth rate can be discovered early and the trend development can be used for one's own company goals. In the case of the linking of production plants with a low degree of digitization, a possibility was shown, how these facilities can be integrated in the context of industry 4.0 together with the new production machines for the measurement of internal factors. In addition to measuring the degree of utilization, operating characteristics and wear and tear of production equipment, the described setup also enables recording of different environments, such as the production or working environment. Recording the data from the environments enables a more comprehensive prediction of the company's performance. The flexible design of the sensor box for different purposes allows it to be integrated into the company's software. With the developed sensor box and the attached architecture an environment for advancements was provided. A comprehensive real-time view of the company's internal status can be displayed and analyzed. This joint view on data relevant to the company (internal and external factors), as described above, represents a broad view of the data collected in the past and in real time on the overall position of the company in terms of holistic corporate performance management. When designing the architecture for data acquisition and analysis, we outsourced this to our own modules so that data can be visualized in different forms, such as classic reporting or a comprehensive overview with interaction options in the MC. The comprehensive representation allows the identification of potential relationships and correlations between data from different sources, which can then be used for decisions and transferred to reports.

CONCLUSION

In the age of digitization there is an extreme potential to collect all for the company relevant data in an automatically way. After that we need efficient and reliable procedures and algorithms to gain decision relevant information and business knowledge out of this data.

For an holistic performance management it is necessary to cover all management perspectives:
- first perspective: management of legal entities and business units,
- second perspective: management of processes,
- third perspective: management of projects,
- fourth perspective: management of employees

and combine them in an integral management system (Roth, 2014).

The described architecture allows to collect and analyze the relevant data and prepare it for a comprehensive view for the management.

The Management Cockpit is able to visualize this complexity and to give the management the transparency over the progress in the strategy implementation, the success of the operations and the development of the company, the competitors and the trends in the market. With this prerequisites the management gains a real-time, overall view over the company’s situation and is enabled for a successful holistic corporate performance management.

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INTERNATIONAL CUSTOMERS' SATISFACTION BETWEEN GREEN AND NON-GREEN HOTELS IN VIETNAM

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ABSTRACT

Vietnam was named "Asia's 2018 Leading Destination" (Das, 2019). However, with a substantial increase in both international and domestic visitors, Vietnam has also experienced environmental challenges. The increase in guests has also given way to an increased growth in hotel development. And with this, Vietnam has offered the Green Lotus Award to organizations that are working toward environmental protection. However, more guests still trend toward patronizing the non-green hotels, noting room rate differences and easier access to the non-green properties. Through content analysis of 2,000 guest comments from TripAdvisor, this study has focused on hotel customer satisfaction in Vietnam using technical quality, functional quality, the physical environment, and the natural environment as factors of satisfaction. Ultimately, this information should provide the green hoteliers a useful understanding on guest satisfaction points between green and non-green hotels that they can use to expand their customer base. The study revealed that guests are most satisfied with the cleanliness of green lotus hotels and the staff's helpfulness or knowledge of green hotels and non-green hotels.

Keywords: Servicescape, Technical quality, Functional quality, Customer Satisfaction, green hotels

INTRODUCTION

Vietnam is fast becoming a very popular tourist destination for both domestic and international travelers. The country is known for its beautiful beaches and coastal views, its scenic mountains, and its historic and cultural sites. And because of its many jewels, Vietnam has experienced impressive tourism growth and momentum, most dramatically in the last decade. The increased number of international visitors, the increase in domestic travelers, as well as the accelerating total revenues, have in part, afforded Vietnam to be named "Asia's 2018 Leading Destination" (Das, 2019).

Activities of the young Vietnamese tourism industry have been recorded by The World Economic Forum (WEF) since 1995, starting with a modest number of 1.35 million international visitors for the year, and increasing to 4.2 million visitors with a revenue receipt of 3.5 billion US dollars in 2008. International visitors tallied over 15.7 million for the twelve-month period March 2018 - February 2019 (Tourism Statistics, 2019).

Domestic tourism has also grown. An estimated 80 million domestic tourists enjoyed Vietnam in 2018, up by 6.8 million domestic travelers in 2017 (2018- Successful year for Vietnam's Tourism, 2019). Within 10 years from 2008 to 2018, Vietnam domestic tourism made a great breakthrough. There are two factors that make this jump. The first is the development of the middle class who are in high demand for tourism. Moreover, the change of prices with lower cost of domestic airlines in Vietnam makes it easier to travel. With these important changes, the number of domestic trips increased from 20.5 million to 80 million, which is a four-fold increase within 10 years (Dinh et al., 2019). Revenue, therefore, has also increased dramatically. The Vietnam Tourism Industry reported revenues of $26.75 billion in 2018. In just ten years, tourism revenues climbed by over $23 billion dollars (Das, 2019).

The tourism infrastructure has had to develop quickly in response to the high tourist demand. By the end of 2012, the country had approximately 13,000 tourist accommodation establishments (up 19.2% compared to 2009), with 265,000 available rooms (up 23% compared to 2009). By 2018, the number of tourist accommodations nearly doubled, offering more than 550,000 rooms, with 20% of the rooms of luxury status (Ngo, 2019). And in 2019, an estimated 30,000 additional rooms were made available. While the rapid development rate of tourism has brought positive impacts economically and culturally, it also has created some resultant negative impacts on the environment and society (Yoon, Gursoy, & Chen, 2001). Depletion of natural resources, pollution, physical impacts, overcrowding of areas, and lack of strong infrastructure have challenged the country as it has welcomed a growing number of travelers to its tourist treasures (UNEP, n.d).

Therefore, sustainability and green practices have become a point of focus, particularly given the growth of hotel development. Realizing the importance of hotels' green practice in preserving the environment, the Vietnam National Administration of Tourism grants "Green Lotus" awards to the hotels which meet the green practice requirements in hopes of raising awareness and responsibility for an environmentally friendly hotel system and the sustainable use of natural resources and energy for environmental protection. Some criteria which are included in the standard to certify the Green Lotus award include factors such as saving water to minimize wastewater or using solar energy in hotel operations to avoid waste and overload of general electricity. Persistence in implementing these standards is an important factor to maintain the position on the list of green hotels of Vietnam's tourism industry (The Environmentally and Socially Responsible Tourism Capacity, 2011).

Unfortunately, the market share of green hotels in Vietnam is very low. According to Vietnam Tourism, in 2015, the number of hotels awarded the Green Lotus certification was 33 out of a total 19,000 hotels across the country (Vietnam Tourism, 2017). Multiple factors might contribute to this unsatisfactory situation including cost to the operators, a higher room rate to the guests, geographic location of the green properties, and lack of a broad consumer audience.

From the hotel operators' viewpoint, many organizations and businesses are still primarily interested in profitability but are less interested in the environment and the long-term benefits of the environment to the nation, their local communities and future generations (Ta, 2012). In addition, green hotels that operate under the eco-friendly guide to improve the environment, may experience higher start-up costs (Han, Hsu, Lee, & Sheu, 2011). From the consumer's perspective, it has been commonly observed that the room rates for green hotels are higher than the non-green hotels since the initial costs for green operating procedures are higher than those for non-green hotels (Cometa, 2012). Second, due to the environmentally friendly operational requirements, many green hotels are located in a remote location, making it less easily accessible to potential guests (Love, 2016). Finally, most green hotels' marketing efforts focus only on green consumers who are already conscious of the environment by emphasizing the contribution of the hotels' green practices to the environment. Most green hotels seldom promote the factors which are important to the general public; this majority may select their hotel based on service, location, or room rate, but may not consider the environmental advantage (Chong & Verma, 2013). In order for green hotels to better compete with non-green hotels and appeal to a larger number of guests, it is important to identify the factors which influence customer satisfaction in both green and non-green hotels. Ultimately, this would be a valuable effort for the promotion of environmental protection in Vietnam. Hence, this study evaluated how technical quality, functional quality, physical environment, and natural environment influence customer satisfaction in both green hotels and non-green hotels.

LITERATURE REVIEW

Service Quality

Quality of service is an important factor when researching hotels and is noted as "the customer's perception of excellence or superiority of an entity" in many studies (Liat, Mansor, Chuan, & Imrie, 2017). Service Quality, in fact, has had significant influence on business performance, customer satisfaction, sustainability, and profitability (Miklós, Haddad, Nagy, Popp, & Oláh, 2019).

Gronroos (1984) assessed how service quality affects customer satisfaction by examining the dual perspectives of technical quality and functional quality. In effect, Gronroos studied "what" a customer receives (the technical quality) and "how" that customer receives the service (the functional quality). The technical quality represents the outcome, or what the customer leaves with after consuming the service (Gronroos, 1984; Fassnacht & Koese, 2006). The functional quality relates to the process of service. Total quality perception is generated from the perceptions of both technical quality and function quality.

In the hotel experience, a guest may pay attention to the technical quality of products. Their experience in using such products, the perception of the quality of the product, and their perspective after use will be an important factor to create the image of the hotel for that customer and other customers who have not yet experienced a stay at this hotel. The results can lead to new insights into what products and services are most praised by customers to enable managers to focus on and utilize their advantages to attract new customers and maintain relationships with old customers. Popular product "categories" in the hotel that fall into the technical quality are areas of rooms, food and beverage outlets, and entertainment services; in green hotels there are also environmental considerations. More specifically, a hotel guest may enjoy the comfort of the bed, may appreciate the water pressure of the shower, may marvel over the beautiful view, and consume excellent food and beverage! Further, the green hotels may offer "green products" such as dispensable lotions and shampoos, which delights the green-minded guest! The hotel manager must determine the appropriate offerings to please their guests and still, the physical characteristics and offerings of the hotel, alone, do not determine overall guest satisfaction (Ali, Hussain, Konar, & Jeon, 2016).

The functional quality of the service must be considered and then integrated with the technical quality offered. Functional quality is related to the satisfaction that the service recipient feels about the process or service experience (Babic-Hodovic, Arslanagic-Kalajdzic, & Imsirpasic, 2017). The functional quality defines "how" the service is delivered and reflects the guest's perspective on the service they are experiencing. Warmth, welcome, courtesy, and professionalism are elements of functional quality that contribute greatly to the overall customer satisfaction. Functional quality is an important factor influencing customers' satisfaction when experiencing green hotels in Vietnam. The perception of how services are delivered whether at the front desk, in the restaurant, or with a given nature conservation program will directly impact their overall satisfaction with the hotel experience.

Ali et al. (2016) pointed that there is a significant influence of technical quality and functional quality on customers' perception and satisfaction. When these two bundles of quality perceptions are integrated, and then evaluated against expectation, the result is perceived service quality (Ali et al., 2016; Miklós et al., 2019). Service quality effects customer satisfaction directly. Therefore, service products and delivery should come together to create a harmonious combination that attracts the attention of customers, resulting in the best quality of service to increase customer satisfaction. In this way, the hotel can have a long-lasting relationship with its customers and gain their loyalty.

Servicescape

Servicescape has also been found to effect customer satisfaction. The term "servicescape" discusses the physical setting of a business (Bitner, 1992; Balakrishnan, 2017). Servicescape is the most widely used term to refer to the effects of tangible and intangible signals on consumers. According to Agnihotri and Chaturvedi (2018), servicescape includes four dimensions: physical, social, socially symbolic, and natural environmental dimensions. With reference to the green hotels, only two dimensions have been addressed: physical and natural environment.

Physical Environment. Physical environment is a factor for managers to understand because it can be controlled by the company to supplement or restrict the interaction of the physical environment and the customers (Zeithaml, Bitner, & Gremler, 2009; Mmutle & Shonhe, 2017). For example, ambient conditions, such as temperature, sound, and air affect human senses. Many studies indicate that these stimuli include images (light and color); cleanliness, smell (air quality, and aroma); surrounding environment (temperature); and hearing (music and noise) (Agnihotri & Chaturvedi, 2018).

These physical factors directly affect the customer when they enter the hotel. This is the first impression of the customer and a very important consideration in hotel design. Green hoteliers try to maintain the natural landscape in and around the property, and they rely on it to create a distinctive hotel that avoids the destruction of nature. Therefore, some important factors of green hotels include the fresh air, the green scenery, the use of environmentally friendly materials, the limited impact of noise, and composting of waste that does not decompose. Some of Vietnam's green hotels, for example, do not use air conditioners in order to reduce harmful emissions into the atmosphere; others build guest rooms with local materials that do not have a harmful impact on the local environment.

In this study, the physical environment is referred to as the environment that can be seen and felt, such as the atmosphere, the decoration, and the furniture of the green hotels. Unlike regular hotels, green hotels have a unique design to create a sense of harmony with nature, avoiding environmental harm. The items used are environmentally friendly, so there may be no chemically based aromas, for example, or no use or excessive use of heaters and air conditioners. Some green hotels in Vietnam are now taking advantage of the natural location of the mountains. According to Githiri (2016), consumers who have greater perception of the physical environment are more likely to have positive emotions, which raise customer satisfaction. The physical environment brings a sense of well-being, familiarity, or comfort to the customer and brings about the positive emotions that every hotel wants its customers to have. Furthermore, the physical environment has a significant impact on the overall impression of the customers (Mmutle & Shonhe, 2017). This overall impression can lead to their satisfaction during their experience in the hotel.

Natural Environment. According to biologist Wilson (1984), an innate connection exists between humans and other living systems, including nature and wildlife. In addition, Clarke and Schmidt (1995) pointed out that many service relationships are "natural encounters" that affect consumers psychologically and at an uneven distribution. Studies indicated that the natural recovery environment has three stimulants for customer recovery; these include being away, fascination, and compatibility (Rennit & Maikov, 2015).

The first stimulant, being away, refers to a break for people from everyday concerns by creating the feeling that they are escaping to a completely different place away from the familiar habitat and the circle of their lives. Natural environments are often the preferred destination for expanded recovery; beaches, botanical gardens, mountains, and lakes are all idyllic places for "getting away" (Kaplan, 1995; Viviers, 2016). The feeling of going away does not have to be measured by distance. However, it requires a person to feel that he or she is living in a completely different world.

The second stimulant, fascination, refers to the ability of a setting to easily keep one's attention; people want to stay in a context because something in that place easily attracts their attention (Kaplan, 1995; Viviers, 2016). An attractive servicescape is a fascinating setting where customers stay away from the noise or disturbance and only when they are ready to rejoin the world, will they venture back into everyday life.

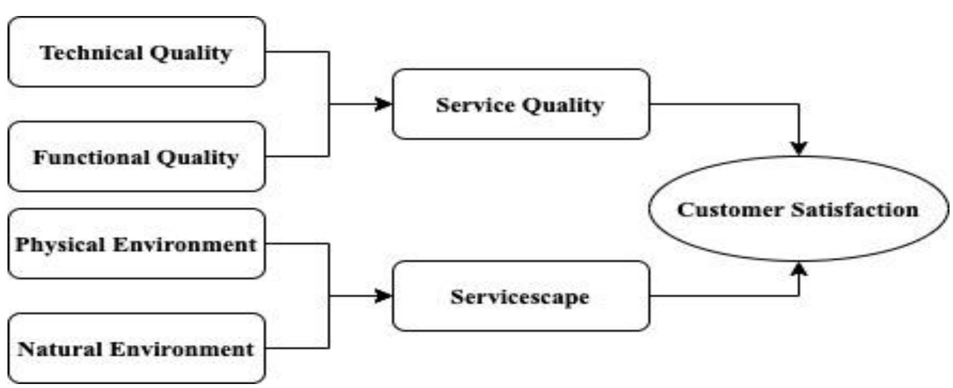
The third stimulant, compatibility, refers to the ability of a setting to provide customers with a sense of belonging (Rosenbaum et al., 2007). A compatible environment is one of human enjoyment, no struggle, and no embarrassment (Kaplan, 1995; Viviers, 2016). When people are in a compatible environment, there are no constraints on human interaction and they can participate in harmony (Rennit & Maikov, 2015). Therefore, guests can find the quiet and fresh air at the green hotel to become calm and rested.

Thus, the commercial servicescape provides guests with three types of restorative stimulants to help them reduce the load of mental fatigue syndrome through patronage of the green hotel. In this study, the natural environment is referred to as the surroundings of the hotel, which is the natural landscape in which the hotel is located. The green hotel can market the beauty of the natural to attract customers. Given the severe pollution situation in Vietnam, the natural environment factor is an extremely important element to consider in attracting guests. The natural environment serves to soothe the guests, helps future generations with ecofriendly practices, saves on hotel costs, and also increases customer satisfaction (Rennit & Maikov, 2015; Viviers, 2016).

Customer Satisfaction. In a rapidly growing service environment, service providers can maintain competitive advantage by providing high quality services to their customers (Mmutle & Shonhe, 2017; Agnihotri & Chaturvedi, 2018). Satisfied customers can bring many other benefits to the service provider as a ripple effect including loyalty to the service provider and active participation in broadcasting by word-of-mouth (Ryu & Han, 2010; Ali, Ryu, & Hussain, 2016). McDougall and Levesque (2000) showed that customer satisfaction is the overall assessment of the service provider. Ali et al. (2016) pointed that there is a significant influence of technical quality and functional quality on customers' perception and satisfaction. These two factors directly affect the customers and are two main factors that make for customer satisfaction. Service products and delivery should come together to create a harmonious combination that attracts the attention of customers, resulting in the best quality of service to increase customer satisfaction. In this way, the hotel can have a long-lasting relationship with its customers and gain their loyalty.

Customer satisfaction of green hotels varies in part, due to the cultural differences of the guests. (Carlos, Alén, Pérez-González, & Figueroa, 2019). International visitors may have different expectations compared with local customers for the feel of natural-friendly products, and may therefore, have a different height of acceptance and satisfaction. Green hotel managers need to pay attention to this factor to create breakthroughs and long-term development for their properties.

Figure 1. Proposed Model.



METHODOLOGY

Sample

Two thousand guest comments posted on Tripadvisor from 20 hotels were analyzed in this study. Customers use online technology to share their travel experiences across different social media platforms. Studies showed that comments or reviews significantly influence customer decisions (Stringam & Gerdes, 2010). The power of online comment influences hotel businesses; this has been shown in many studies (Ye, Law, Gu, & Chen, 2011). According to Gretzel and Yoo (2008) three quarters of tourists refer to online reviews when planning their trips. When evaluating travel information, "visitors constantly rank word-of-mouth recommendations as the most credible travel information source" (Pan, Ting, & Bau, 2013, p. 3). In addition, unlike casual interviews that document temporary emotions, online comments are the most accurate source of information about the true feelings of the visitors since after experiencing service and scenery, customers will have had more time to think about the emotions and will be able to provide the most authentic comments (Dermers, 2015).

The reason for selecting international guests' comments is that all the Green Lotus Certified Hotels are 5-star luxury hotels and thus the majority of their customers are international customers. The authors selected current guest comments from Tripadvisor. Tripadvisor is the most popular source in Vietnam, which is a famous website in helping customers to search for information, as well as to give their opinions and experiences. Furthermore, most Vietnamese domestic customers left comments in the Vietnamese Tripadvisor platform; therefore, their comments were written in Vietnamese, not in English. The information analyzed in this study are 100 comments from the chosen 20 hotels from two different categories: green lotus certified hotels and non-green hotels. The first group has 10 hotels with Green Lotus certification; they were voted top 10 luxury hotels in 2015 according to the announcement of the Tourism Department in Vietnam and included names such as Sheraton Hanoi, Six Sense Ninh Van Bay, and Intercontinental Hanoi Westlake. The second group includes 10 non-green hotels which are the competition in the same area with the certificated hotels such as Hanoi Daewoo, Hotel Nikko Saigon, and Fusion Maia Da Nang.

The two thousand comments were selected based on the relevancy. The authors read through all the comments and looked for pre-determined key words under technical quality, functional quality, physical environment, and natural environment for comment selection.

Table 1. Descriptions and Keywords of the Dimensions

Dimensions	***Descriptions***	***Keywords***
Technical Quality	Hotel products and services that give customers the ultimate feeling of comfort when they stay at the hotel. (Rosenberg, 2017).	room, food, drink, spa, bag, air conditioning, pool, shampoo, towel, ...
Functional Quality	The delivery of services, how customers feel the best services at the hotel (Hognas, 2015).	staff, reservation, front desk, friendly, polite, gentle, professional, useful, enthusiasm, understanding...
Physical	The environment that can	temperature, air, noise, music, smell, building,

Environment	be seen and felt, such as the atmosphere, the decoration, and the furniture (Mmutle & Shonhe, 2017).	furnishings, windows, bed, decorations...
Natural Environment	The surroundings of the hotel, which is the natural landscape at which the hotel is located (Viviers, 2016).	fresh, green, organic, tree, mountain, forest, sea, ocean, sand, nature...
Customer Satisfaction	The emotional response to a particular service experience, and the response is developed based on customer and non-customer cognitive reactions to service performance (Jang & Namkung, 2009; Agnihotri & Chaturvedi, 2018).	Positive Key words: joy (joyful, pleased, romantic, welcoming), excitement (excited, thrilled, enthusiastic), peacefulness (comfortable, relaxed, at rest), and refreshment (refreshed, cool) …
		Negative key words: anger (angry, irritated), distress (frustrated, disappointed, upset, downheartedness), disgust (disgusted, displeased, bad), fear (scared, panicky, unsafe, tension), or shame (embarrassed, ashamed, humiliated) …

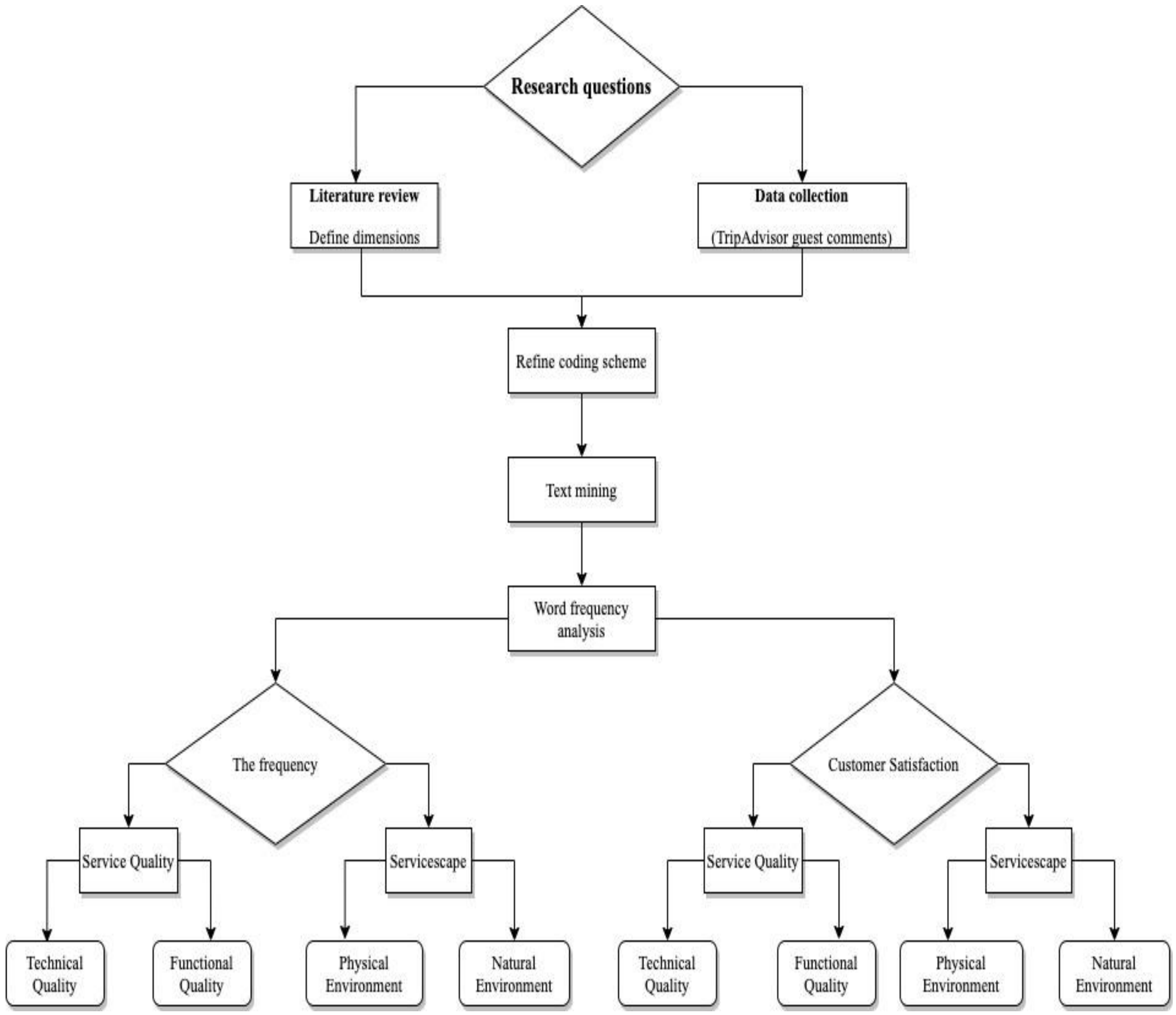
DATA ANALYSIS

This study uses content analysis as the method of analyzing the collected data. Content analysis is a research technique used to make repeatable and valid inferences by explaining and coding text documents. By systematically evaluating the text, qualitative data can be transformed into quantitative data (Hsieh & Shannon, 2005).

In scientific research, the text mining of large datasets is bringing efficiencies and new knowledge (McDonald, 2012). Using text extraction can save time and resources by analyzing the text effectively and the results can be continually obtained. This is very useful when tracking comments over time. Also, text mining unlocks hidden information and improvement in the research process and quality. Two thousand reviews were downloaded to Microsoft Excel for analysis. Each guest comment was assigned an identification number for cross references. The study follows the research framework and procedure in Figure 1.

The coding was conducted by two trained graduate students who read through every comment manually, then placed each comment of content into pre-established categories presented in Table 2. Then, the authors apply Voyant to determine word frequencies. Furthermore, recognizing one common criticism about content analysis is that it might not fully capture the complex text because it tends to simplify the content based on word count. Hence, the semantic analysis was also conducted manually on every comment to determine key words associated with a positive or negative emotion in the same manner as previously mentioned. Both the importance (frequency of mentioning) and perception (positive/negative) of technical quality, functional quality, physical environment, and natural environment were visually presented utilizing an Excel template. Figure 2 explains the research framework and procedures.

Figure 2: Research Framework and Procedures (Source: Pan et al., 2013)



RESULTS AND DISCUSSION

Importance (frequency of mentioning) of Technical Quality, Functional Quality, Physical Environment, and Nature Environment

Inter-coder reliability. The inter-coder reliability is estimated by Percent Agreement Technique to compare how the two coders classify the same online review comments. The analysis possesses satisfactory inter-coder reliability with a 0.98 percent agreement between two coders. As indicated by Kassarjian (1977), an analysis is reliable when an inter-coder reliability is higher than 0.85.

Technical Quality. The results revealed that the top three important features related to technical quality are the same between green hotel customers and non-green hotel customers and they are room(s), breakfast, and pool. Among the 1000 green lotus hotel comments, "*room(s)*" were mentioned in the comments up to 1,254 times, followed by "*breakfast*" (554) and "*pool*" (392). A customer commented in TripAdvisor that: "*The rooms are very large, well appointed, clean and comfortable*". Similarly, among the 1000 non-green hotel comments, "*room(s)*" were mentioned in the comments up to 1,184 times, followed by "*breakfast*" (519) and "*pool*" (376). According to TripAdvisor, a customer said "*...Pool areas are great and very well maintained.*"

Functional Quality. The results revealed that the top three important features related to functional quality are the same between green hotel customers and non-green hotel customers and they are staff, friendly, and helpful. Among the 1000 green lotus hotel comments, "*staff*" was mentioned 707 times, followed by "*friendly*" (279) and "*helpful*" (205). Similarly, among the 1000 non-green hotel comments, "*staff*" was mentioned in the comments up to 851 times, followed by "*friendly*" (341) and "*helpful*" (256). According to TripAdvisor, a customer commended about Six Senses Ninh Van Bay resort "*Staff was always friendly and tried to be helpful*." And in group non-green hotels, Nikko Saigon received a compliment about their staff: "*The staff is very kind and helpful.*"

Physical Environment. The results revealed the differences between green hotel customers and non-green hotel customers in terms of physical environment features. Among the 1000 green lotus hotel comments, the top three frequently mentioned key words are: "*old*" was mentioned 159 times, followed by "*large*" (145) and "*floor*" (136). For example, the Intercontinental Hanoi Westlake Hotel received compliments about the room: "*Room: a. Clean and Large. b. Every room has a balcony. c. Clean and large shower room with bathtub*." On the other hand, among the 1000 non-green hotel comments which are related to physical environment, only one key word was mentioned more than 100 times. "*Floor*" was mentioned in the comments up to 131 times. For example, about Vinpearl Da Nang Resort and Villa, a guest left a comment on Tripadvisor and said "*room was very spacious with a polished, wooden floor and big marble bathroom*."

Natural Environment. The results revealed that the top three important features related to nature environment are very similar between green hotel customers and non-green hotel customers. Among the 1000 green lotus hotel comments, "*view*" was mentioned 202 times, followed by "*beach*" (197) and "*water*" (131). For instance, a guest commented about Six Senses Ninh Van Bay resort: "*The positives were the room, which was beautiful, the private pool which was fabulous, the view, the personal touches like the bicycles and the beach which was stunning*." Similarly, among the 1000 non-green hotel comments which are related to nature environment, "*view*" was mentioned in the comments up to 204 times, followed by "*beach*" (170) and "*river*" (134). Fusion Mai Da Nang's comment showed in Tripadvisor that "*What a treat the accommodation is superb the cabana has great views of the ocean and its own pool, the amenities are excellent the food awesome and the service 5star plus.*"

Table 2. Importance (frequency of mentioning) of Technical Quality, Functional Quality, Physical Environment, and Nature Environment

	Green Lotus Hotels	Non-Green Hotels
Technical Quality	room(s) (1254); breakfast (554); pool (392); service (385); food (336); location (263); bar (256); restaurant (232); clean (224); comfortable (162); buffet (161); spacious (135)	room(s) (1184); breakfast (519); pool (376); food (373); service (370); clean (244); spa (240); restaurant (225); location (220); bar (216); comfortable (213); buffet (172); restaurants (162); bed (120); bathroom (115)
Functional Quality	staff (707); friendly (279); helpful (205)	staff (851); friendly (341); helpful (256)
Physical Environment	old (159); large (145); floor (136)	floor (131)
Natural Environment	view (202); beach (197); water (131)	view (204); beach (170); river (134)

Positive and Negative Perceptions of Technical Quality, Functional Quality, Physical Environment, and Nature Environment

Technical Quality. The results reveal that both green hotel and non-green hotel customers felt positively about technical quality. However, the intensity of the positive feelings of green hotel customers was less strong than the intensity of the positive feelings felt by non-green hotel customers. There were 7.24 times as many positive comments as negative comments from green hotel customers, but the PN ratio (i.e. the number of positive comments divided by the number of negative comments) was 16.06 among non-green hotel customers. Particularly, the PN ratio for room(s) is 6.19 among green hotel customers and 15.25 for non-green hotel customers; and the PN ratio for Food and Beverage is 8.21 among green hotel customers and 22.26 for non-green hotel customers.

Functional Quality. The intensity of the positive feelings of non-green hotel customers was more than double the intensity of the positive feelings felt by green hotel customers. There were 18.11 times as many positive comments as negative comments from non-green hotel customers, but the PN ratio was only 6.99 among green hotel customers. Particularly, the PN ratio for helpfulness of staff is 28.85, friendliness of staff is 38.71, and professionalism of staff is 3.48 among green hotel customers and the PN ratio for helpfulness of staff is 21.82, friendliness of staff is 47.07, and professionalism of staff is 6.57 among non-green hotel customers.

Physical Environment. The results reveal that both green hotel and non-green hotel customers felt positively about the physical environment. The intensity of the positive feelings of non-green hotel customers was almost triple the intensity of the positive feelings felt by green hotel customers. There were 9.89 times as many positive comments as negative comments from non-green hotel customers, but the PN ratio was only 3.81 among green hotel customers. Particularly, the PN ratio for Architecture is 8.71, Facilities is 1.52, and Atmosphere is 1.98 among green hotel customers and the PN ratio for Architecture is 12.63, Facilities is 6.88, and Atmosphere is 17.38 among non-green hotel customers.

Natural Environment. The intensity of the positive feelings of non-green hotel customers was about double the intensity of the positive feelings felt by green hotel customers. There were 34.63 times as many positive comments as negative comments from non-green hotel customers, but the PN ratio was only 17.20 among green hotel customers. Particularly, the PN ratio for Landscaping is 19 among green hotel customers and 46.17 for non-green Hotel customers.

In summary, it is clear that the non-green hotel guests have shared a greater degree of positive perception of their hotels than the green hotel guests. The PN ratio of the online reviewers from green hotel guests is lower than the ratio of non-green hotel guests in nearly every dimension studied. In fact, the PN ratios of the green hotel guest comments is consistently lower in every feature except the functional quality of "staff helpfulness".

From this study, green hotels with Green Lotus government-certification show a great advantage in terms of rooms (size) and food, but there are many complaints and poor comments about the behavior of the employees. Interestingly, the green hotel guests have reported a high PN for staff "helpfulness" but much lower PN ratios for staff "friendliness" and "professionalism". Therefore, it can be implied that the staff may be performing their tasks and roles, but not performing their roles in a way that creates a positive human connection. Such negative perceptions can create overall lower guest satisfaction when considering the entire hotel experience. This human element can potentially negate the efforts of those green hotels that have adopted strong environmental protection practices. While the green practices may be important to hotel guests, the overall experience may be irreversibly altered by a staff who lacks a positive attitude of service, hospitality, and professionalism.

Non-green hotels also have a number of advantages which attracted international guests; with higher positive perceptions of service and guest/employee interaction, helpfulness, and professionalism, positive satisfaction has been achieved. However, this type of hotel also received some negative comments on the quality of the furniture and the facilities. These physical features contribute to the overall experience and may indicate the need for repair and renovation in these properties to continue to attract new and repeat guests.

Table 3 - Positive and Negative Perceptions of Technical Quality, Functional Quality, Physical Environment, and Natural Environment

$$PN = \frac{PositiveComments}{NegativeCommetns}$$

	Green Lotus Hotels			Non-Green Hotels		
	Positive comments	**Negative comments**	**PN**	**Positive comments**	**Negative comments**	**PN**
Technical Quality	1441	199	7.24	1703	106	16.06
Functional Quality	846	121	6.99	1521	84	18.11
Physical Environment	526	138	3.81	732	74	9.89
Natural Environment	172	10	17.20	277	8	34.63

IMPLICATIONS

The results of this study verified that customers' perceptions toward non-green hotels are more positive than those perceptions of green hotels. Green hotel managers can utilize the information and overall themes from this study to improve their operations, and ultimately improve their guests' satisfaction.

From the perspective of "technical quality", the results show through this content analysis that the top five most frequently mentioned words regarding technical quality were the same for both green and non-green hotel guests. "Rooms", "breakfast", "pool", "service", and "food" were the most mentioned words and were in nearly the same order from a frequency perspective. Therefore, it could be argued that these areas present top priorities for guests, regardless of whether the hotel is green or non-green; this should be a focus of excellence from the management viewpoint. Additionally, it is also noteworthy that there is no mention from green hotel guests of words such as "bed", "bathroom", and "spa". These may be areas that provoke no emotion either way for green hotel guests; however, these are areas of consideration, as they have favorably impacted the non-green guests' responses and could enhance the opportunity for guest satisfaction.

The results of the study also show that the variety and appeal of the food in hotels has a great influence on the satisfaction of customers. Menu selection, food quality, and the general presentation of the food offerings could increase the positive emotions of guests, and therefore, increase guest satisfaction. Managers should make this a point of focus in developing the guest experience.

In addition, some of the negative comments about the green hotel rooms may indicate that the hoteliers need to make adjustments in housekeeping procedures and facilities inspections to ensure that the cleanliness and condition of the rooms are satisfactory. The condition of the furniture and facilities in the room are important to the overall guest experience.

With regard to functional quality, the results indicate that guests from both green and non-green hotels use the terms “staff”, “friendly”, and “helpfulness” with great frequency, showing significant importance to the guests. Regardless of the type of hotel, staff friendliness and helpfulness impact the overall guest experience. However, in the green hotels, the positive emotions were greatest in the attribute of helpfulness. Therefore, green hotel managers should promote and exploit this notable attribute to promote and advertise their services. For the green hotel manager, this finding does suggest that the staff is delivering needed services to the guests. The managers should use this advantage to encourage and motivate employees to continue to help their customers anytime, anywhere, and to share useful information with them. In this way, customer satisfaction may increase, and customer loyalty may be achieved.

On the other hand, green hotel customers showed the most dissatisfaction with the professionalism and the friendliness of employees. This is a big disadvantage that needs to be addressed and changed quickly. Added efforts in recruitment, training, and supervision may be strongly encouraged of the management teams of the green hotels. Managers must model appropriate behaviors, conduct, and professionalism. The human interaction will impact the overall guest experience, and while managers often have difficulty in training for these attributes, the positive connections that friendliness and professionalism can convey will be worth the training efforts. Improvements in these areas will lead to a better quality of service.

The physical environment seemed to create greater response from the green hotel guests than the non-green hotel guests. Unfortunately, there was much greater negativity in comment from the green hotel guests, particularly in the areas of furniture and facilities in the hotels. Therefore, the physical environment was not nearly as pleasing. The word “old” was used 159 times by the green hotel guests, indicating that perhaps some upgrades, or renovations should be considered. Therefore, hotel managers should invest in good and long-lasting furniture and equipment, as well as focus on the maintenance of furniture and facilities.

The green hotel guests did mention the word “large” many times in the analysis, while there was no mention of this word from the non-green hotel guests. If physical size of the rooms or common areas is a factor that invokes positive emotion, it may be a good marketing resource for the green hotel managers, and a factor that could not be easily imitated by its non-green competitors.

From the perspective of the “Natural environment” factor, this study has shown that landscape has a great influence on the satisfaction of customers. Therefore, green hotel managers should select a location where they can create beautiful landscapes in the surrounding areas, and then those locations should be exploited through advertising. Moreover, green hotel managers should promote their sustainable practices, a rising trend that creates positive emotion. By raising the awareness of their offerings to consumers as well as promoting the hotel itself, the existing green hotels can help the government attract more hotels to register for certification and implement more natural protection practices.

Finally, to demonstrate governmental commitment to global environmental protection and responsibility for the present society and future generations, the Vietnamese government should promote the many benefits of practicing "green". Not only are these practices responsible actions for the betterment of the environment, but they also help to save long-terms operating costs. Perhaps more specifically, the government should also set the rules for waste disposal to protect the environment around the hotel.

The green movement is critically important to the environment. This study indicates, however, that the practices of our green hotels must be in addition to the generally required practices of our service industry, including the elements of technical quality, functional quality, physical environment, and the nature environment. In combination, the green hotelier will create satisfaction for the guest, success for the organization, and a contribution to society and the environment.

Limitations and Recommendations for Future Research

This study has five limitations: sample, comment, model, and type of customer. First, samples were taken from several cities and regions throughout Vietnam. Therefore, this does not reveal the overall situation of all hotels within Vietnam's borders. Future research is encouraged to gather comments from more cities in Vietnam. Second, the comments are the most current 100 comments per hotel nearest to the time of sample selection and future research can gather more comments to expand the sample size. Third, the theoretical framework is this study might not cover all factors that affect customer satisfaction and future research can include other factors. Fourth, only international customer reviews were analyzed in this study, which in turn limits the sources of information and the perceptions of customers, especially domestic customers; all are important sources for all hotels. Finally, the authors used the comments from TripAdvisor because this platform has the greatest number of international tourists' comments. Nevertheless, when applying the results to the daily operations, hotel managers need to be aware of the rising concern regarding the false negative comments on the social media platforms, such as Google and TripAdvisor. Therefore, future studies might gather guest comments from different platforms which have better guards on the reviewers' credentials.

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