Total Quality Management: administrative applications in higher education

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Abstract
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TOTAL QUALITY MANAGEMENT: ADMINISTRATIVE APPLICATIONS IN HIGHER EDUCATION

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Total Quality Management (TQM) programs are designed to improve each customer's satisfaction with an institution's goods (education) and services (administration) through a systematic redefinition of institutional priorities and employee attitudes. How can an institution attempt such an extensive revamping of itself? The answer appears relatively simple, yet remains elusive to many. The answer is through the hands of its staff.

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Many institutions have successfully implemented TQM models on their campuses. Others, however, have been unsuccessful in their attempts. Before embarking on a TQM implementation an institution must ask itself many questions: (a) Why are we investigating TQM for our campus? (b) What do we hope to accomplish? (c) Are we ready to make the long-term financial and human-resource commitment necessary to make it a success? There is, however, an even more fundamental question which must be addressed by the academic community: Is TQM right for higher education? This is an issue which must be discussed and clarified. Currently, higher education is challenged by a number of views relating to the applicability of TQM, generally considered a business-world application. These views cover a broad range of sentiments. Some schools have embraced TQM into all aspects of their operation--from administration to
instruction. Other schools have implemented TQM in all or a part of their administrative units and have left the academic branch of the institution completely out of the picture. Finally, others have rejected any management paradigm that even hints of using total quality components. The following sections will illustrate the history of TQM and how it has been applied in higher educational settings.

History

The TQM movement has grown from what Daniel Seymour (1992) calls "the era of statistical quality control" (p. 8), a movement which had its beginnings in the 1930s at Bell Telephone Laboratories. An employee at Bell Laboratories realized that much of the variation in the quality of manufactured goods could be managed by altering/controlling the main elements in the production process before work even began on the production line. For example, if the quality of raw materials, training of staff, and quality of equipment on the production line could be improved, the only variable left to deal with is the exception. This concept greatly reduced the resources necessary to test each item manufactured as it reached the end of the production line. Bell was pleased to see the benefits realized through the change in inspection procedures: Costs fell while productivity and quality improved.

As time passed it became apparent that controlling the quality of raw goods and measuring quality of the output did not effectively control the quality of the product as it reached the end the production line (Seymour, 1992). Joseph Juran, an employee at Bell, defined avoidable and unavoidable costs as expenses incurred on the production line. Avoidable costs are related to manufacturing process. If the job is done correctly the first time, he theorized, no reworking required and costs are reduced. Unavoidable costs relate to the training necessary to allow the
manufacturing process to reach higher levels of production while keeping avoidable costs to a minimum.

Edward Deming is generally credited with the modern TQM movement (Seymour, 1992). According to Seymour, Deming met with the Union of Japanese Scientists and Engineers, a "desperate" group of Japanese businessmen, in the 1950s (p. 11). Deming's message made an indescribable impact on these businessmen. They wholeheartedly embraced his ideas, molded their business practices to it, and the quality assurance model bloomed. American businesses, which had been struggling in the face of Japanese competition, were quick to seek out Deming. Unfortunately, they also expected quick fixes to their problems. Of the number of companies and colleges which have begun TQM models, few have successfully implemented a model which has worked. This lack of success will be discussed later.

Applicability of TQM to Higher Education

Total Quality Management models often refer to the customer as the driving force behind how an institution implements its TQM model. Thinking of students as customers directly affects institutions of higher learning. When identifying customers it is important to make the distinction between internal and external customers (Johnson, 1992). Internal customers are defined as persons or units within the institution which rely on outputs from other people or units within the institution. External customers are the students and any agency outside of the institution such as potential employers, governing boards or state agencies. While these groups may not share the same needs, they all have definite needs which must be addressed through the TQM implementation.

Chickering and Potter (1993) and Schwartzman (1995) emphasize that the student is not necessarily the customer to which educators should cater. Their criticism is that students may
know what they want from their education (training which will allow them to enter the job market quickly and at a competitive salary), but do not know what they need from their education (advanced skills which will allow them to lead a changing society). Pedersen (1992) goes a step further. He maintains that students are not customers in higher educational settings "because, simply put, one cannot buy an education. It may be acquired--through a combination of personal effort and the support and guidance of concerned faculty and staff." These authors state that business and society are the customers for which students should be prepared. In this vein, students should be prepared to work in an ever changing society and be equipped with the tools necessary to meet changing goals and needs. Not adequately preparing students to enter the society of the future may benefit the students in the short term by allowing them to enter the job market quickly, but limits the growth of society's future.

On a larger scale, many faculty members are skeptical of the phrase "Total Quality Management" itself. Their concerns? Who measures "quality," and how will total quality principles be imposed on their teaching? Who will "manage" the educational aspects of the institution? Will the public begin to encroach on the faculty's right to academic freedom? Godbey (1993) acknowledges faculty's concerns and indicates that they must be accommodated in the implementation of TQM if the academic arena will be affected. Chickering and Potter (1993), however, indicate that TQM can be applied successfully to the administrative aspects of an educational institution without directly affecting the educational aspects of the institution. Where should the line be drawn? The remainder of this paper will focus on the application of TQM principles to the administrative branch of higher education.
Deming's TQM Model in Higher Education

One of the first institutions in the United States to adapt TQM to an educational setting was Delaware County Community College (DCCC) (Entner, 1993). D. James Donald, then Associate Dean of Instruction, viewed a documentary, "If Japan Can...Why Can't We?" (Seymour, 1992; Entner, 1993), explaining Deming's TQM model. After extensively studying and lecturing on TQM, Donald introduced DCCC's president, Richard DeCosmo, to the concept. DeCosmo enrolled himself and other DCCC executives in a training program which led to the college's commitment to TQM. Donald expanded the TQM model to the entire campus through the implementation of three goals (Entner, 1993): "1) To transform our philosophy of administrative management to TQ, 2) to develop training curricula and programming it to TQ for business in our service area, and 3) to incorporate the concepts and philosophy of TQ into our curriculum and into classroom management" (p. 29). As with other TQM systems, this has meant understanding the needs of their students, performing a self-evaluation on current internal policies and practices, identifying areas which need change, developing a plan of action, measuring success, and then starting the process all over again.

Though originally designed for use in the business world, Deming's model serves as the basis for many TQM models both in business and academia. Deming's 14 Points for Quality (Schermerhorn, Hunt & Osborn, 1994, p. 378) are:

1. Create a consistency of purpose in the company to:
   a. innovate
   b. put resources into research and education
   c. put resources into maintaining equipment and new production aids.
2. Learn a new philosophy of quality to improve every system.
3. Require statistical evidence of process control and eliminate financial controls on production.
4. Require statistical evidence of control in purchasing parts; this will mean dealing with fewer suppliers.
5. Use statistical methods to isolate the sources of trouble.
6. Institute modern on-the-job training.
7. Improve supervision to develop inspired leaders.
8. Drive out fear and instill learning.
10. Eliminate numerical goals and slogans.
11. Constantly revamp work methods.
12. Institute massive training programs for employees in statistical methods.
13. Retrain people in new skills.
14. Create a structure that will push, everyday, on the above 13 points.

Steps 1 and 2 deal with defining a mission statement for the organization and selecting a means (TQM model) to implement the mission. Steps 3, 4, and 5 involve measuring the current status of the organization or determining how it measures up to the new mission. These steps should also incorporate receiving feedback from customers to determine what they want from the organization. Steps 6 through 10, 12, and 13 deal with training and providing the leadership to keep the transition to TQM moving on the right track. Step 11 indicates that one should keep updating "the way we do things" until a system which works is found. Step 14 says once you are finished, see step 1.

Leiker and Masters (1992) offer guidance on the application of these fourteen points to higher education. They indicate that the best way to achieve a consistency of purpose is through leaders who have a long-term vision for the organization. If the leaders are capable of seeing where they want the organization to be over the long term, they are more likely to put resources into the positions that are vital for moving the organization to that goal.

Point 2 requires that the organization implement a new philosophy toward quality. Top administrators must believe in the total-quality process and be leaders in its implementation. To be successful, all employees must be aware of the concepts and processes associated with TQM. A lack of understanding by those who will be working with TQM concepts on the front lines of
the organization will certainly lead to an unsuccessful implementation of the TQM model. Such understanding can be best achieved through continuous training and support.

Ceasing dependence on mass inspection, Point 3, calls for the organization to look at the process used to accomplish tasks instead of simply measuring the final outcome of the system. Most shortcomings in the outcome of a project can be remedied by making adjustments to the processes by which the “object” was built. The term “object,” as used in this context, is inclusive of any and all educational outputs. This can include services performed by physical plant or library personnel, or the overall educational process itself. An attempt should be made to improve these processes before blame is laid on an individual.

Deming’s fourth point challenges colleges and universities to reevaluate procurement methods that rely on the concept of lowest bid. Deming says that employees and supplies should be sought on the basis of who/what can provide the best quality or service to the institution. There should be less emphasis placed on the cost to the institution. Once a supplier of a product is found and has proven that the product is of high quality, Deming’s model instructs us to stay with that supplier to insure quality in the future. Always looking for the lowest bidder to provide supplies can be detrimental to the institution if the quality of the goods is substandard. Similarly, when hiring employees (or retaining existing employees), the institution should look at the potential benefits the person brings to the organization and spend less time evaluating the salary requirements asked by the employee. If the person is of high quality, he/she may be worth a higher salary than the institution had originally planned to spend. Quality, then, should be the driving factor in procurement, not price.

An overriding theme in Deming’s work is that of improving quality. Point 5 instructs the institution to use statistical methods to isolate sources of trouble within the organization. In some
respects, statistical measurement may be more difficult to employ in a service industry such as education since the end-product is not as easily measured as the quality of widgets off the production line. Instead of looking at items in the traditional statistical light, institutions need to identify processes which they already know to be inefficient, develop flow-charts to document the work flow, and implement appropriate measures to improve the process.

Employee training, Point 6, is an integral component of a successful TQM implementation. Deming calls on employers to offer continuous on-the-job training sessions for employees. Preferably, according to Leiker and Masters (1992), the training should be offered by someone who has mastered the task. The trainer should not be chosen simply because he/she is a member of management. The purpose of training sessions is to improve the level of knowledge and skill of those who perform the tasks on a daily basis. Therefore, it is critical that they receive training from the most qualified employees at the institution—those who have already mastered the task.

The manager of a department is, among other things, responsible for providing inspired leadership. Leiker and Masters (1992) clarify Point 7 by indicating that a leader must be able to distinguish between system inadequacies that prevent employees from performing their jobs effectively, unique events which can not be anticipated, and the shortcomings of an individual staff member. Schermerhorn, Hunt, and Osborn (1994) quote Deming as saying that up to 94 percent of all organizational problems result from poor management. The challenge for managers is to become effective in what they do for the institution.

One of the challenges which managers face is to create an atmosphere in which employees are not afraid to ask questions (Point 8). Employees who constantly fear reprisals or outbursts from their supervisor are less willing to extend themselves when assisting a customer. Managers should lead by example, showing employees new ways to perform their jobs more effectively.
They should praise successes instead of having outbursts over failures. Positive reinforcement will do more to improve the work environment than negative reinforcement and intimidation.

As departmental employees become more comfortable with their expanded work roles they will see the benefit in working with people in other departments. Point 9 calls for the removal of inter-departmental barriers. If, for example, a student needs help with his/her billing statement it may require that the Bursar and Financial Aid offices work together to assist the student in paying the account balance over an extended period of time. Leiker and Masters (1992) state that teamwork can also reduce duplication of effort, stream-line processes, and improve communication within the organization.

Another area in which fear can be driven out of the organization is through the elimination of numerical goals and work slogans (Point 10). Management must do more than set performance goals for its employees. It must actually provide the employees with the tools, leadership, and training which will allow the employees to reach institutional goals. If employees feel threatened and pressured to meet unrealistic quotas and do not feel empowered to utilized the tools necessary for them to reach those goals, there is little chance that they will be successful.

Point 11, building on prior points, calls for the institution to review constantly its methods of eliciting and completing work. Changes which are implemented today may not be effective a few months or years down the line. The institution must constantly review procedures to ensure that they are current, applicable to the task at hand, and most importantly, are working.

As employees become more productive through the implementation of the above guidelines, they will be more aware of their work and more willing to want to make it even better. In his twelfth point, Deming calls for the training of employees in statistical methods. If they can see how their own work flows and measure their own productivity, they will be motivated to
reduce variation in the process. Reducing variation leads to improved work flow and increased satisfaction in the quality of work performed and satisfaction in the work setting.

As newer, better methods of performing work are identified, it may become evident that certain processes employ too many employees while others are lacking. Point 13 reminds employers that existing employees may need to be retrained to perform different tasks. However, training goes beyond the need to reassign workers within the institution. Personal growth can occur through both job related and non-job related education. Employees should be encouraged to take classes which allow them to learn and expand themselves, which will lead to enhanced morale (Leiker and Masters, 1992).

Finally, Point 14 reminds the institution that total quality is a goal which is never really reached. Every day, the institution and its employees must strive to reach the next level of excellence in service. The plan which administrators design must be put into action if TQM is to make any impact on the operation of the institution.

Other Educational Models

Since Deming’s TQM model was adapted to higher education by DCCC, many more two- and four-year colleges and universities have accepted TQM principles on their campuses: Syracuse, Indiana University, Oregon State, Wisconsin, Colorado State, Maryland, Minnesota, Clemson, Georgia Tech, Harvard, Lehigh, Chicago, and Miami to name a few. Though there are many variations of the TQM model in both content and title, they share the common goal of increasing customer satisfaction through increased employee involvement in the college.

TQM models differ not in their goals, but in the steps which are followed to implement the goals. Each begins with the decision to implement some version of a TQM model. Typically, the next steps mirror the DCCC example, above. These steps may incorporate relatively few
objectives (DCCC's three main goals) or a multitude of goals, depending on the model chosen and the level of detail the institution wishes to identify. To illustrate, a review of four systems follows.

Clemmer (1991) suggests that there are three main areas of concern comprised of twelve steps which must be addressed in order to accomplish his Service/Quality System (SQS). These areas are institutional values, employee skills, and resource alignment. However, there are three prerequisites which must be fully addressed to make the SQS implementation successful. First and foremost, management must be focused on the goal of implementing TQM; second, the institution must measure the needs of internal and external customers; finally, the institution must develop a plan of action (Wolverton, 1994).

Syracuse implemented a version of TQM which includes seven steps designed to address three goals (Shaw, 1993). These steps are "planning, defining the situation, analyzing causes, developing solutions, implementing, standardizing, and future planning" (p. 23). Determining the current situation of the organization, customer needs, and solutions based on data analysis and evaluation are the three objectives Syracuse is striving to meet.

Canadore College was also experiencing frustration in its daily operations. Administrators felt that their top-down hierarchy inhibited staff involvement in running the college. Administrators showed great foresight in realizing that as long as there was a top-down hierarchy there would be an impedance to staff involvement. This foresight led to the implementation of the Associates Model for Governance (Hudgins, Oliver, & Williams, 1993). Interestingly, the Associates Model closely resembles Argyris's continuum from immaturity to maturity (Schermerhorn et al., 1994). The model's goal is "to move the college . . . from one of anxiety, adolescence, compliance, and control to that of adventure, adulthood, accountability, and partnership" (p. 39). Canadore echoed three themes common to all models: (a) the mission
must be clear, (b) performance measures must be clearly identified, and (c) information dissemination is critical to the success of the model (Hudgins, Oliver, & Williams, 1993).

A problem common to many institutions is their reliance on a top-down hierarchy that encourages an information flow along a fixed chain of command, typically within a specialized area of expertise. While many managers feel that a top-down hierarchy is the best way to design an organization, it is actually using a non-systems view of how the institution is organized (Brockett & LeTarte, 1993). There may be clear lines of authority, but the elements of communication and working together for a common goal are lost (Schwartzman, 1995). When the organization can view itself as a system it can assess more accurately how it should be organized. The systems view allows the organization to evaluate the essence of its existence, allocate resources in a manner which maximizes the achievement of the organizational mission, and be responsive to the needs of its customers.

Each model discusses the importance of measurement in assessing both from where the organization is beginning as it enters a TQM model and in determining its effectiveness following implementation. All reviews speak highly of the improvements which have come about as a result of their respective TQM models. Northwest Missouri State provides the most graphic detail in support of the gains which were realized after implementing TQM on their campus, sharing analytical data dating from 1980 (Hubbard, 1993). The majority of data provided are anecdotal in nature and generally represent quantitative "outputs" instead of qualitative "attitudes." Customer attitudes and their perception of quality are valid measures of the success an institution has achieved. Without accurately evaluating these attitudes it is extremely difficult to claim that there has been improvement.
Dissenting Opinions

This lack of quantitative (verifiable) outcome measures has led to criticism from some authors and caveats from others. Fisher (1993), Nicklin (1995), and Pedersen (1992) are critical of TQM. Fisher (1993) writes about its "completely undocumented promises that TQM will involve everyone, make everyone happy, and improve everything" (p. 15). Others express resistance to the idea of allowing a business practice to drive an educational institution. Yet others are fearful of the perceived ramifications—if we develop teams, I, as a middle manager, am basically cutting my own position. As mentioned above, quantifiable data supporting the effectiveness of TQM models in higher education are sketchy, and a lack of communication has led many to fear the change to TQM.

James Fisher (1993), an educational consultant and vocal opponent to TQM, feels that TQM models are being accepted too quickly and without enough evaluation. He believes in de-emphasizing systems and in emphasizing employee attitudes. Fisher appears to subscribe to an authoritative/lead-by-example model of management. He writes that a good manager must maintain a social distance from his/her subordinates to ensure that he/she maintains the power necessary to be an effective leader—his main argument against work teams. He also criticizes TQM models for their emphasis on changing systems in order that work may be done to benefit the student and not emphasizing that, on occasion, cuts must be made to staff and budgets in order to accomplish a desired end. While none of the authors supporting TQM address these issues, they also do not explicitly forbid such actions.

Fisher (1993) appears to contradict himself when discussing his view of employees in the workplace. He insinuates that TQM places all the blame for institutional deficiencies on systems and none on people, leading one to believe that employees are the cause of institutional problems.
However, he later tells of how he "led" his employees, by example, to "direct everything [they] did toward the best interests of the individual student" (p. 18). Fisher encourages the use of morale building techniques through a "leader servant model." He committed his upper administrators to the concept of focusing employees on the needs of students, then took the lead in bringing the model to all levels of the institution. It would seem logical that if staff can be trained to work in the best interest of each student they are not entirely to blame for the current state of affairs in the organization.

Nicklin (1995) indicates that certain colleges are using the guise of TQM in order to cut their payrolls. They have used the terms “downsizing” or “rightsizing” during times of financial difficulty. In effect, she feels, these colleges were looking for an easy way to solve their financial difficulties through cutting expenses—namely through the reduction of their work forces. Nicklin agrees with Fisher (1993) in the evaluation of the lack of success TQM has found in its transition to academia.

Pedersen (1992) criticizes TQM's use of the student-as-customer metaphor and its lack of a strategic vision. He maintains that an education is not earned passively—students must take an active part in its acquisition. For this reason, the student can not be considered a customer, but must be considered an active partner in the educational process. Pedersen also indicates that TQM deals with short-term improvements, not a long-term vision.

Analysis

Daniel Seymour (1993), an ardent supporter of TQM, addresses some of the concerns of those critical of TQM. A major source of detractors' discomfort stems from TQM's roots—the business world. The language of TQM is geared toward a business-oriented climate. This argument, he says, is easily laid to rest by stressing the use of "student" instead of "customer" and
making other educationally-related substitutions. Seymour also suggests calling the system one of "continuous quality improvement," a goal which all involved in higher education should recognize as important and worthy of attaining (Seymour, 1993).

Seymour and Fisher agree that many institutions--both business and educational--have lost track of their objectives (Fisher, 1993; Seymour, 1993). Many businesses, according to Seymour, have confused "means with ends, activities with results" (p. 12). Pedersen (1992) agrees that TQM most often fails due to its lack of a long-range, strategic vision. There has come to be too much measurement, too much review, too much planning, too many meetings, too much emphasis on a TQM officer, and not enough asking "What do we want to achieve?" This is the point at which an organization either soars to new heights of productivity or begins a downward spiral of being focused on the wrong objective. Institutions must remain committed to the goal of providing service in the most effective way possible. They need to avoid making change simply for the sake of appearing to be responsive to customer's needs.

Regardless of the warnings of the critics, TQM is being practiced by institutions of higher education across the country. The overriding single quality which determines whether or not TQM survives on a given campus is the level of commitment to the chosen TQM model. All authors supporting TQM stress the need for administrators to embrace and advocate the properties of the specific TQM model to which the institution subscribes. The loss of institutional focus is listed as one of the main downfalls of TQM, reinforcing the belief that it is central to the success of TQM. Failure to maintain focus will cause the institution to become mired in the process and lead to an unsuccessful implementation.

Given the commitment of administrators, it is time to identify customer needs. The results of this research will play a large part in the implementation of TQM. An institution can not
improve its customer service if it doesn't know what service the customers want to receive. Once the institution has polled customers and front-line employees for input and evaluated all suggestions and criticisms received, it is in the position to begin changing itself. Because front-line employees have constant exposure to the needs and concerns of customers, they can offer strong insights on what changes the institution should make to meet the customer's needs. Unfortunately, too many managers have overlooked this powerful source of information.

After customer needs and expectations have been established it is time for the setting of goals, philosophies, and rewriting (if necessary) the institution's mission statement. Hudgins, Oliver and Williams (1993) break this activity into a set of three questions which must be asked: 1) What is, or should be, our mission, 2) what results are expected as a result of enacting this mission, and 3) once implemented, how do we measure the mission's effectiveness? Mission statements will vary considerably in their scope depending on the nature of the institution--community colleges will not have the same need as ivy league colleges. Institutions must carefully define their intended goals and objectives. Once defined, the institution must use its mission as the main driving force behind all decisions made along the TQM road. The important thing is to identify the needs of the customers, identify the strengths the institution has to offer and blend the two into a meaningful mission which the institution can implement in accomplishing its goals.

It is now time to develop a training program and make it available to all staff. Katz and West (1992) recommend that institutions seek ways to encourage administrators who are willing to take risks, and to minimize penalties imposed upon the administrators when the risk fails to generate the desired result. No model will be completely effective if staff do not feel motivated to support it or if they do not feel empowered to truly assist students. Student satisfaction, it has been estimated, can contribute up to one-third to the perceived value of their education (Delene &
Therefore, the training program should focus on distributing power and responsibility to those individuals who are in the best position to assist students and customers. The people on the front lines have the most opportunity to interact with customers while assisting with questions and fielding complaints. If they are able to handle the situation on the spot, the customer will be much more satisfied with the interaction and will leave with a much more favorable impression of the institution.

Following the successful training sessions and implementation it is time to re-evaluate successes to date, make any necessary modifications to the plan and continue forward. Constant measurement is a key facet of most TQM models. Re-evaluation allows the institution to verify that its mission has been properly identified, that it is adhering to its goals, and that it identifies areas which can be further improved. The continued evaluation of TQM may be equated with trying, mathematically, to straighten a curved line. No matter how many times you divide the curve of the line in half it will never be completely straight. Likewise, an institution will never be perfect—constant change is required to make it the best that it can be.

Conclusion

TQM theories are spreading throughout higher education. As participating colleges begin to see their programs blossom they will be in an excellent position to recruit the diminishing number of students seeking to further their education. A ripple effect will begin spreading as currently enrolled, satisfied students begin to tell their friends what a great place ‘their’ college is to attend, which will result in increased enrollments at that institution.

While not supported by a wide variety of published data, the results are impressive. Those colleges which shared quantitative results showed impressive cost savings in physical plant and personnel costs (McMillen, 1991; Nagy et al., 1993). Improved systems decrease the time spent
on tasks which (a) makes more time to do the task better the first time, (b) makes it unnecessary to repeat a task, and (c) allows more quality time to be spent with individuals instead of paper. In addition, empowering staff to assist customers leads to increased staff morale which has implications across the institution. Additional research into TQM's effect on the attitudes and beliefs held by employees and customers alike is both needed and encouraged.

Institutions would be wise to listen to the voices of detractors and use them as warnings of what can happen if an institution loses sight of its goals. Detractors lift valid points against TQM. Ignoring their criticism may only lead to falling into one of the traps which they warn against. Institutions must also incorporate preventative measures into the implementation process, and stick to their mission and goals. Given the necessary level of commitment from administrators, TQM, in whatever variety the institution subscribes, has an excellent chance of thriving.
References


