AC 2008-2194: USING MICROSOFT OUTLOOK FOR PERSONAL AND PROJECT PLANNING IN A FIRST YEAR ENGINEERING COURSE

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Using Microsoft Outlook for Personal & Project Planning in a Freshman Year Engineering Course

Abstract

A great variety of tools are available for use in the planning and organizing of project work. This paper discusses the use of Microsoft Outlook (Outlook) as a primary planning and organizational tool for a first year engineering course; "Project Planning and Development." In the course, Outlook is used to manage student schedules and group meetings, to exchange drawings, agendas and recorded meeting minutes. Outlook is also used by students to organize and distribute tasks both within the groups and between interdependent groups.

Practicing engineers typically use organizational tools such as Microsoft Outlook in the workplace to manage their own schedules and projects. The early introduction of these tools to engineering students provides valuable preparation for industry practice. In addition, this imposed discipline forces students to critically assess their scheduling choices early enough to lessen retention problems. Personal organization is a key factor used to address early academic problems with engineering students. Programs such as "Success 4 Students", taken in the first semester, help students identify the key roadblocks to success. This course provides the students with additional organizational tools, such as Gantt charts, deployment charts, and CPM diagrams, which are applicable to both personal and project scheduling.

This paper will discuss how Outlook is integrated into the class and compares it with other methods of group organization and communication. Previous versions of this course relied on the "Blackboard Academic Suite" for group communication. The paper also shows how an instructor can use Outlook to better oversee and manage student groups. A comparison of students that have taken the course with each method is presented and techniques for further enhancement of the project scheduling with Outlook are discussed.

Introduction

In 2004 the EAS109 Project Planning & Development course was developed and implemented to provide early exposure to project management skills essential to all engineering students. The course was organized around two major projects to keep student interest while developing key technical skills.[1] Initially, Microsoft Excel (Excel) was used to organize and schedule the team activities and projects for the course. Surprisingly, the students lacked even the most basic organizational skills which was noted in the repeated out of class team meeting and organization problems. Student prioritization was clearly askew with the academic demands. Various attempts to remedy the organizational problems were implemented in parallel courses and eventually integrated into the EAS109 class, including the requirement for personal scheduling in Microsoft Outlook (Outlook).

The College as a whole implemented the Success4Students program, developed at Texas A&M, in 2006 to establish some basic personal scheduling goals for engineering students.[2] The Success4Students program focuses on developing good time management and goal setting

through a highly structured program and set of tasks for the student. In EAS109, the students are held accountable for completion of these tasks and graded on the details of implementation. The basic student schedule developed after lengthy self-assessment of personal goals and priorities is placed in Excel with the rough format shown in Figure 1, taken from the Success4students workbook.

Priorities	Est. Time	Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
priority 1		7:00 AM							
priority 2		8:00 AM		class schedule					
priority 3		9:00 AM		work schedule					
priority 4		10:00 AM		free time listed					
priority 5		11:00 AM		personal time listed					
priority 6		12:00 PM							
priority 7		1:00 PM							
priority 8		etc…							
		To Do List							

Figure 1: Format for Schedule Development in Microsoft Excel

The students evaluate the weekly schedules by comparing the actual recorded activities with the scheduled activities. The schedule is then adjusted to better reflect the actual priorities and schedules and the process is repeated. After a one-month period of self-assessment, students have completed the Success4Students program and have refined their schedules for the semester. In the final two weeks of schedule adjustments, the students use the schedules as a basis for establishing teams. Those with similar free time for scheduled meetings are grouped together and Outlook is introduced.

Managing Individual Student's Schedules

Individual students can create and manage their schedules within Outlook. The structure of Outlook facilitates the creation of recurring events such as class meeting times. Recurring events can be scheduled for intervals such as daily, weekly, every second week, the second week of the month, etc. Recurring events can also be scheduled to continue for a fixed number of occurrences, for a specific number of occurrences, or with no end date. Individual occurrences can also be removed or modified for events such as vacations, etc.

A sample of scheduling a recurring event is shown in Figure 2. This sample would be for a class that meets every week on Friday from 8:00 AM until 10:20 AM, with the first occurrence on February 1st and the last occurrence on May 8th. After creating the recurring event, individual occurrences can be modified or deleted as appropriate. The calendars can then be shared with other members of the group to facilitate the scheduling of meetings. Each student or group member can control the level of information available to other members depending on their needs. This can be a restrictive as showing only the level of time restriction (busy, tentative, free, out of office or no information), the default setting, or the details of scheduled events can be

made available to other users (individually selected users). It is also possible to restrict information on individual appointments by designating these as private.

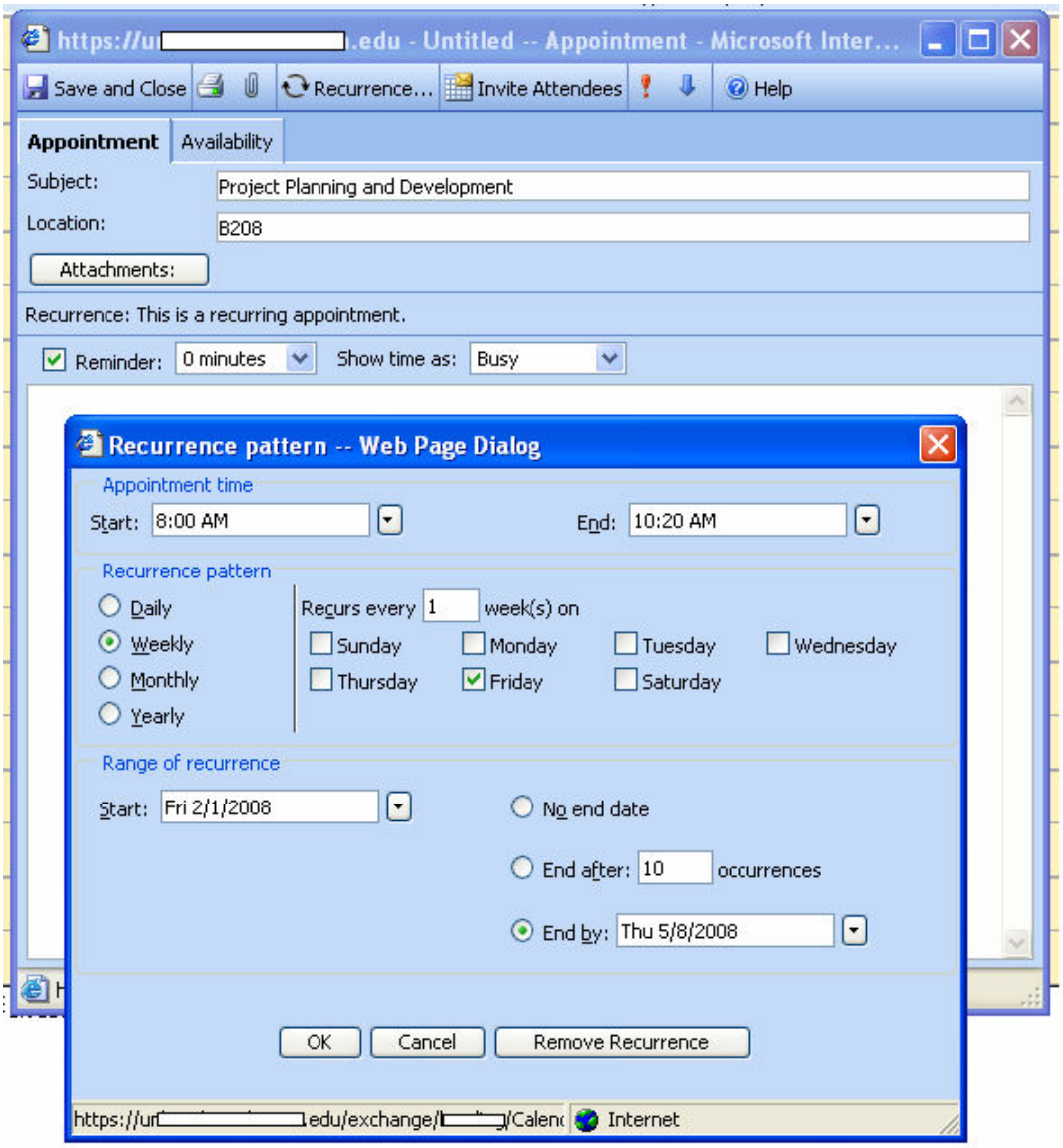

Figure 2: Scheduling a Recurring Appointment in Microsoft Outlook Express

Scheduling new or additional meetings is easy if all members of a group have placed their schedules on Outlook. Figures 3 and 4 illustrate an example of scheduling such a meeting. Figure 3 shows the appointment generation screen from which a meeting request can be distributed. In this case, the requestor has proposed a meeting for January 28, 2008 from 9:30 AM to 11:00 AM. The request includes a title, meeting location, and a brief description of tasks to be performed at the meeting. The requestor can then check availability of other required and optional attendees as indicated in Figure 4. In this example we can see that the three required participants are only available between 9:30 and 10:30 on the requested day. Depending on the urgency of the meeting, the requester could modify the request or continue with the meeting with only partial participation.

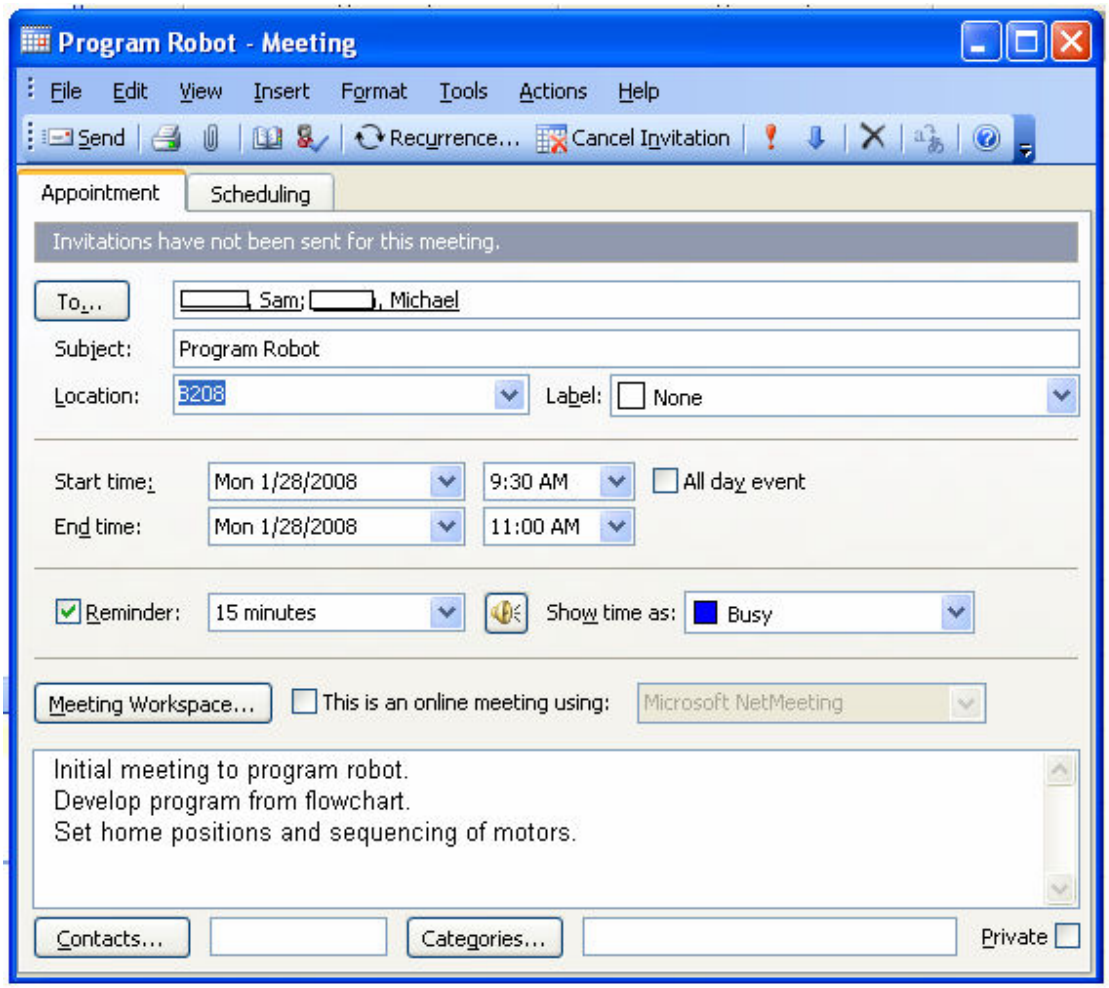

Figure 3: Details of Request for Scheduling a Meeting (Microsoft Outlook)

Context of the Course – Project Planning and Development

Most of the engineering programs at University of New Haven require the course Project Planning and Development (EAS109) during the first year, preferably the first semester. Course objectives and student outcomes are listed below. The format of the course revolves around two projects. The first of these projects involves construction and programming of robots interspersed with conveyors to simulate an automated manufacturing floor circuit. Each group is required to construct and program their robot and to program the conveyor that supplies material to their robot. Each team must then communicate with the team before and after their station to complete a smooth circuit.

All communication between interdependent teams must be done electronically, through email descriptions and CAD drawings. This level of communication is implemented through distribution lists in Outlook with information embedded in email messages and/or attached to those messages. Further details of inter group communication is beyond the scope of this paper.

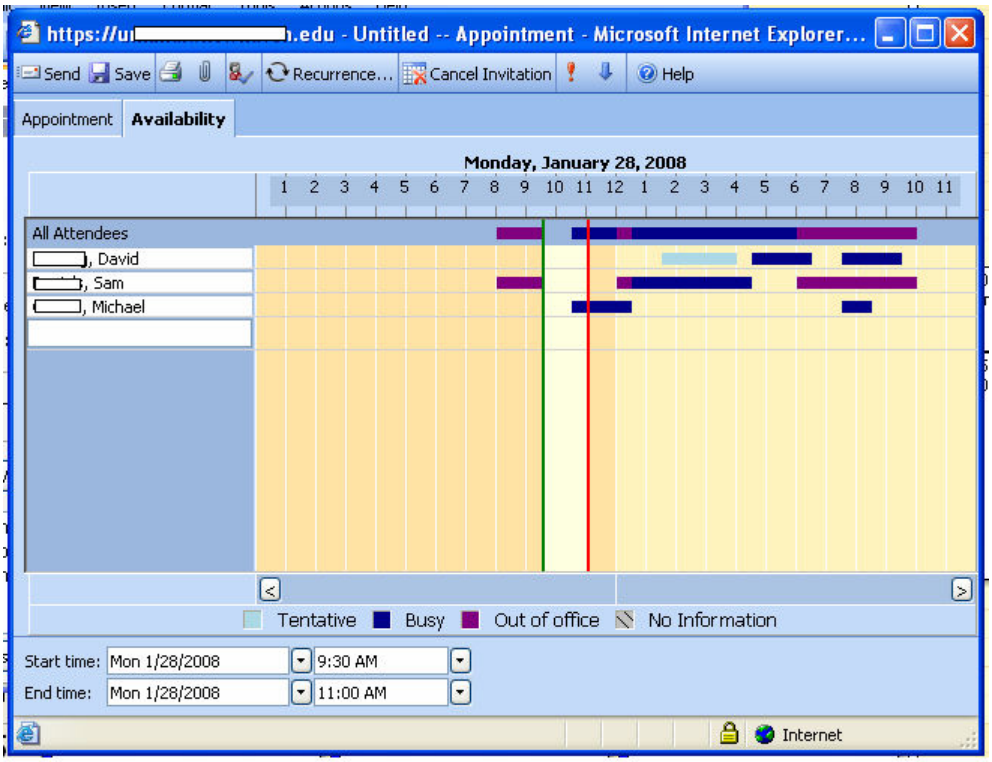

Figure 4: Details of Group Member Availability (Microsoft Outlook Express)

Within the project group responsible for an individual portion (one robot and associated conveyor), several features of Outlook are utilized. For basic communication the group will use the email features of Outlook with a distribution list as shown in Figure 5. The instructor is a member of each distribution list to facilitate monitoring of intra and inter group communication.

Outlook is also used to schedule group meetings. All students have access to other students' schedules through groupware calendar systems (GCS). The particular GCS version used is Microsoft Outlook Express, a web based system available to students and faculty from any location.

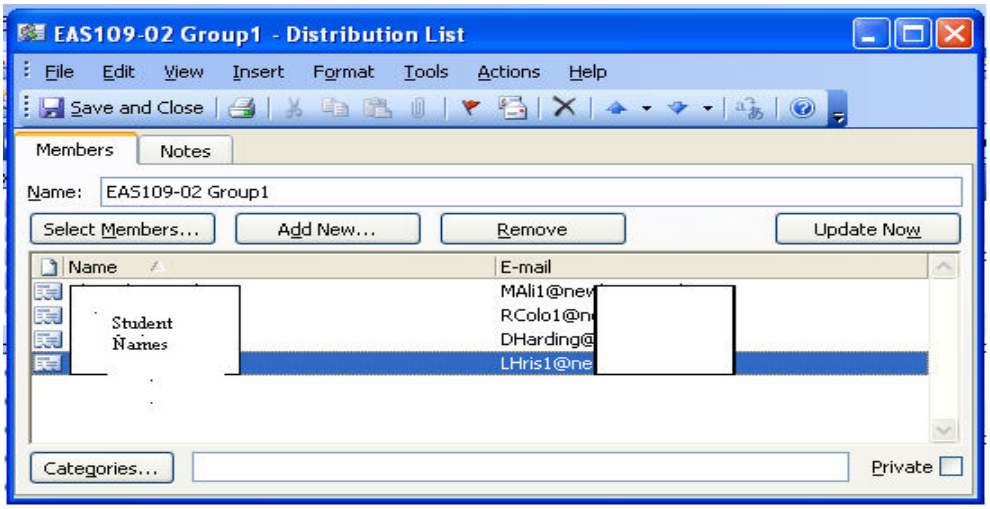

Figure 5: Sample Distribution List for Group 1 (Microsoft Outlook)

Assessment of Usage by Students

To assess the usage of Microsoft Outlook and compare to previous methods of communication, one section of the course was selected from each of two consecutive semesters. During the spring 2007 semester, one section of the course was offered with twenty students, and this is used as the reference section, identified as Spring07. During the fall 2007 semester, three sections were offered, with the section taught by the primary author selected for comparison, and this is identified as Fall07. The Fall07 section contained fourteen students divided into four groups, with each group consisting of three or four members. In the Spring07 section, the twenty students were divided into five groups of four students each.

The Spring07 section used the Discussion Board feature of Blackboard as the primary mechanism for communication. A survey of the course Blackboard site indicates a total of nineteen postings, twelve of which included attachments. The distribution of postings varied between two and five per group. By comparison, for the Fall07 section there were at least 107 messages or meeting request/notices. This represents only those messages or meeting request/notices on which the instructor was copied. The usage by individual groups varied greatly from a low of four to a high of fifty-seven. There was also a large variability in the type of usage of Microsoft Outlook between the groups. Some groups used Outlook almost exclusively for email while one group used Outlook extensively to schedule, reschedule and modify meeting requests.

The way in which the Fall07 section used Outlook was further analyzed to illustrate some of the variability of usage. Many of these details are shown in Table 1 for reference. The extent of documented communication was clearly increased by the use of Outlook in the course. The predominant usage was also clearly for communication within a group. The infrequent usage by some of the groups was due, in part, to the students in some groups living in close proximity where it was easier to arrange meetings verbally. Since with the previous communication system, Blackboard, it was necessary for students to specifically look for posted messages and communication, Outlook allowed for better response time.

Table 1: Summary of Usage of Outlook – Fall 2007

	Group 1	Group 2	Group 3	Group 4
Total Uses	57	4	31	15
Messages	57	4	11	8
Meeting Requests/Changes	0	0	20	7
Messages Within Group	56	0	24	7
Messages Between Groups	1	4	7	8
Messages With Attachments	11	4	1	4
Most Uses By Individual	28	3	27	15

Feedback from Students

One of the primary outcomes of the course is for student to develop basic project organization and planning skills. As an integral part of these skills, the student's ability to personally organize themselves is a basic building block. In the course evaluations, students were asked to assess the usefulness of the course in developing and demonstrating good time management skills. Figure 6 indicates that 43% of the student in the multiple sections found the course very useful while a full 90% agreed that the course was either somewhat useful, useful, or very useful. Again, while inconclusive the indication seem to be that the current combination of Success4Students, Excel-based schedule development, Outlook-based project scheduling and personal organization seem to provide a useful experience for the student.

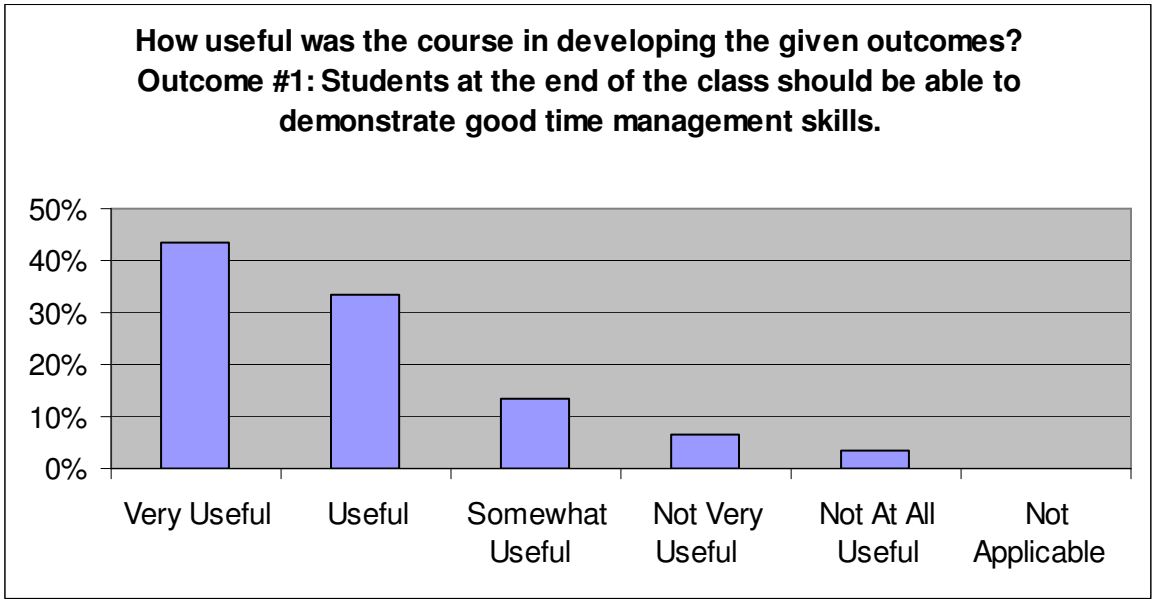

Figure 6: Student Feedback on Course Evaluation

Conclusion/Recommendations

The inclusion of Outlook for scheduling of student time and course project activities was implemented successfully and provided some clear indications of improvement in student personal organization and planning. While inconclusive, the number of student problems within groups decreased and the need for faculty intervention with dysfunctional teams also decreased. Student, team and inter team problems surfaced immediately with the inclusion of faculty in the distribution list for emails among student groups. This oversight may have also tempered the content of the emails and helped to maintain a higher degree of professionalism. . The typically difficulties arose from a failure to complete tasks between teams or by an individual team member. Obvious issues with students were quickly resolved with a brief email from the faculty member to the student group or groups in conflict. From an assessment of the usage patterns it is clear that in the future more faculty intervention will be needed to make sure all groups are using Outlook effectively for group scheduling/meeting and communication functions.

In the previous attempts to maintain student schedules with Excel, the schedules became static documents that were not maintained throughout the semester. The use of Outlook by email savvy students extended throughout the semester and seemed a natural and easy way for students to plan and organize.

One item that would be beneficial to future classes is the addition of the use of the task scheduling features in Outlook as an alternative to the email distribution of tasks without reminders and timelines. The organization of tasks within Outlook requires established timelines, with start and end dates, and popup reminders that act as catalysts for students to maintain established schedules and priorities.

One issue is clear from the perspective of the faculty teaching these classes, the students need a method to more effectively self-assess their goals and the relation to their weekly schedules for this approach to be implemented effectively and faculty require measures of successful implementation of scheduling and planning by students to assure that changes made to the course provide meaningful gains for the student.

Bibliography

1) B. Aliane et al., Project Planning & Development for Engineering Freshman, ASEE 2004 Annual Conference, paper 2004 - 1817
2) Success4Students, 1Quest Learning, College Station, TX, 2002