PEY Report

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As my first full-time job in the IT industry, GE Global Exchange Services (GXS) gave me more experience than I ever could have imagined.

One reason that I chose GXS over other companies is their integration of the intern position. Unlike many places (or even other GE businesses,) GXS gives interns a real workload with real deliverables and real results. This workload includes more than mindless number crunching or software development.

Like full-time employment, proving your competence solidifies an integral role in the team.

Introducing… GE Global Exchange Services

GE Information Services changed their name to GE Global Exchange Services just before my internship started. This name change started a significant shift in business direction: one that places intellectual capital and employee comfort over dress code and regulations.

This shift began with a foosball table, free snacks, and free pop. This shift ended by giving me enough respect, responsibility, and skill to settle in a lead development position.

Testing the Waters

The GXS team tested my technical skills almost immediately. At the time, the "big project" was a massive custom-designed system for Coca-Cola, its suppliers, and distributors. To introduce myself to the project, I created reusable components from existing code.

My introduction turned abruptly into full-fledged development when one of the project's lead developers left the company.

The Batch System

This ex-developer maintained the largest set of modules in the system: a set of batch processes to automate common transactions.

The developer briefed a co-worker and I shortly before he left. He waved his hands, ran some test scripts, and assured us that "it all works -- you'll only need some minor tuning as problems arise."

Shortly after that, I watched the batch system crumble as the testing team worked on it. When viewed against the design documents and specifications, *not a single piece worked.* In fact, the batch-system essentially proved a concept -- the architecture and basic development was complete, but little else.

I worked intensely with the testing team over the next several months to improve the quality of the batch system. Testers identified weak areas, and I added missing functionality, fixed broken pieces, and implemented change requests from the customer.

As my internship lengthened, I drew pride from stabilizing and improving the quality of the batch system. As my ownership (and the quality) of the batch system grew stronger, my role at GXS deepened. Rather than simply fix defects, I helped design new functionality, review old functionality, and recommend improvements.

My internship lengthened more, and the lead developers truly considered me their peer. My opinion in meetings carried more weight. Informal cubicle-side chats became the seeds for solutions to tough technical problems. I became a key technical guide and resource, not simply an intern developer.

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Process Improvements

With practice, this important role soon became the baseline from which I explored new directions in my internship. I continued to maintain my respected technical status while I branched out to examine other opportunities.

Because of this growth in new directions, I am particularly proud of several process improvements that will long outlast my internship:

Automating the build

As you might expect, building (and deploying) a large, complex system is itself a large, complex task.

When I first joined the Coke project, our Unix administrator spent most of her time deploying our application code to our various development boxes. From the start, it easily took two full working days to deploy our application.

When I looked at the problem, I realized that I could turn this cumbersome process into a quick, efficient, and automated one.

After a week of "downtime development," my scripts reduced the time for a full build and deploy from 16 hours to 45 minutes. Word of these scripts spread, and now several of GE's projects depend on them.

Light methodology

As the team (and I) matured, we looked at ways to improve our development methodology. Until then, we built, deployed, and tested our system haphazardly. We knew that we needed to improve our process, but not with one of the "heavy methodologies" that generate more documentation than code.

With the help of my constant input and research, our team defined a set of working procedures to build, deploy, and test our system more efficiently.

As the development system improved, so did our productivity, quality, and customer satisfaction.

Unit testing

An unfortunate reality of software systems is that they are never defect-free. Even with a highly skilled testing team, defects still manage to slip through. To answer this problem, I looked outside of GE for possible solutions.

I found insight to this problem through a new development methodology called "Extreme Programming." Extreme Programming recommends that developers write "test cases" for their code before they ever write the code itself. Extreme Programming helps automate this entire process: to write code that tests itself.

I used myself as a guinea pig of this new process and impressed myself with the results. Our team is in the midst of implementing my recommendations as an integral part of our development process.

Communication Skills

Aside from my technical training, GXS exposed me to a much more delicate subject: business communication. For the first time in my life, I was required to discuss programming with non-programmers. For the first time in my life, I was required to discuss difficult technical concepts in terms that managers, business analysts and testers understand. In fact, one of my greatest challenges was to communicate these problems in such a way that these non-technical people could understand -- and confidently relay -- these difficult concepts.

A digital trip to Manila

Near the end of my internship, I realized that I should organize a presentation to transition my 16 months of accumulated batch-process knowledge to other developers. Not only did developers understand very little of the batch system, they actively avoided it for fear of its size.

At the same time, I realized that I could help push GXS' globalization goal by including our fledgling Manila team in this knowledge transfer.

As my preparation for this set of meetings grew, so did the interest in it. Our project manager, program manager, lead developer, and testing lead all expressed interest in the presentations. So did several other people who were just getting comfortable with the project. They expressed this interest even knowing that I had to schedule the meetings at 7:00am to overlap with a 12-hour time-difference to the Philippines.

This meeting grew into two very successful meetings. Co-workers heaped praise on me for finally enlightening them.

Leadership Skills

I mentioned earlier that my role at GE quickly blossomed from simple development into participation as a key technical guide and resource. This position helped form two parts of my GE internship: my influence as a technical leader, and my leadership of a team of developers.

A technical influence

As my technical skills became known, GXS quickly acknowledged me as one of their technical leaders. Unlike some coding-guru-super-hermits, I took the opportunity to help shape other developers.

I helped others with their development or technical challenges. I gave constructive feedback to weaker developers. I explained difficult system and coding concepts. I helped other developers engineer system modules.

Most of all, I helped influence other interns and developers to strive for the same.

Sub-team lead

My next big step of leadership training was the "sub-team lead" position that I assumed near the end of my internship.

As our project neared completion, we decided that we needed to improve several aspects of our development process. Our productivity was down, and our quality was waning. To solve this problem, several highly skilled developers (of which I

was one) each coordinated the efforts of their own small team of developers. As sub-team leads, we were responsible for:

- providing technical assistance on difficult problems
- monitoring each developer's progress
- distributing tasks to match individual developer's strengths
- following-up on questions to reduce downtime
- monitoring and testing code quality to improve efficiency

As a sub-team lead, I helped the GXS team drastically improve its efficiency, quality, and knowledge.

Awards and Recognition

GE GXS recognized my accomplishments with more than additional responsibility.

Night on the Town Award

GE awarded me with the "Night on the Town" award for outstanding professional contributions approximately half way through my internship. The award was monetary, but the most important part was the accompanying letter:

> " From the onset you quickly established yourself as a key developer on this project. Your hard work, dedication, commitment to quality and technical knowledge serves as an example to any new GE employee and especially to your fellow co-ops.
>
> You have earned respect and recognition from senior team members, who have not spared your from tough challenges. They have trusted your ability to solve most complex technical issues and meet demanding deadlines."

System Analysis and Design with UML

My next award from GE came as a free course at Learning Tree International. Courses at Learning Tree International cost several thousand dollars and are normally never offered to interns. I am the only GXS intern ever to receive a Learning Tree training course.

GE Intern of the Year Award

My manager nominated me for the *GE Canada Intern of the Year* award near the end of my 16 months.

GE flies winners to their headquarters in the United States, showers them with praise and certificates, then sends them home with a large monetary prize.

I should find out the results in a few months – but I am honoured to simply have received the nomination.

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