The Paradigm's experience

MSC Malaysia Capability Development Programme organised a Success Story Contest themed: "Developing A Sustainable Organisation" recently to encourage local firms to share their experiences of adopting capability development methodologies. Following is the winning article submitted by Goh Keng Yew from Paradigm System Bhd.

The writing on the wall
2nd June 2004

Goh's thoughts drifted to the numbers Chiu had emailed him yesterday. Program Fixes Required had increased five-folds from 120 in Sept, 2003 to 620 in May 2004. First sign of distress was detected in May 2003 when Program Change Requests more than doubled from 200 to 500. Goh suspected that there might be a delayed effect between the increase in change requests and program fixes. These and other reported issues had caused a backlog. He was trying to figure out a positive spin to the depressing numbers in the monthly management meeting shortly.

The year before, he brushed off the sudden hike in Program Change Requests and attributed it to the increased new installations. Now, it would not make sense to describe these numbers as a one-off blip as defects had been growing steadily for the past four months. When fixes or new features were deployed, clients complained that some programs that used to work failed.

The problems would worsen as the number of installations was expected to increase. Developers and implementers would be more demoralised with the backlog and unrelenting Program Change Requests. Adding new developers would be of little help as he was well aware of the adage "adding people to a late project makes it later". Moreover, it would not be a sustainable model. The writing on the wall was very clear, improve the processes or perish.

At wits end
Between 8th June 2004 and 18th December 2004

Goh relayed the meeting outcome to Chiu when they met up to explore their options. Chiu was a high achiever and had been promoted rapidly to the position of Software Development Manager. Apart from being an accomplished developer he had an uncanny ability to quickly grasp new software engineering concepts. They agreed to accelerate the implementation of the Software Engineering Institute's (SEI) Capability Maturity Model (CMM). The adoption of CMM had always been at the back of their mind but more pressing matters had always taken precedence. This time it was inevitable.

The plan was for Chiu to distill the mountain of CMM literature to fathom the model while Goh would contemplate proposals from CMM consultants. The few CMMI consultancy firms that Goh found were based outside of Malaysia. The cost quoted varied from RM200,000 to RM400,000. With the huge price differential, they were uncertain who could best implement a sustainable improvement model.

Chiu had cautioned Goh to look for substance, not form. Anyhow, the investment would be more than 15% of the company's revenue. Regardless of the importance, it would be difficult to justify to the shareholders. Without guidance, progress was excruciating as Chiu attempted to decipher the 600-page CMM document. CMM had also been superseded by Capability Maturity Model Integration (CMMI). To describe the second half year as challenging, was an understatement, Chiu had to contend with increasing backlog, mounting pressure for new features and lowering morale among developers. Chiu and Goh were at their wits end.

A glimpse of light
Feb 16, 2005

An invitation to a QuESTS Programme Briefing on Feb 17, 2005 at the MSC Innovation Centre at 3.00pm organised by Multimedia Development Corporation (MDC, now MDeC) caught Chiu's attention. Goh had also received a fax of the invitation just before Chiu met him. Finally, there are others who have similar needs. Still, they had their doubts on how helpful the programme would be. They rescheduled all appointments and registered for the event.

Half an hour into the briefing, Goh and Chiu were pleasantly surprised at how straightforward the 600-page document seemed. The final briefing was even more astounding. The QuESTS Programme was for eligible companies to be assessed at CMMI maturity level 2. Participating companies would only need to pay a fraction of the price typically quoted by CMMI consultants. Even better, MDC was going to share half the cost. It was just too good to be true. Management gave the green light to proceed and within a week, the application was submitted to MDC.

The programme was expected to be disruptive as Chiu would be out of the office for almost 30 days during the 10 months attending training. Apart from Chiu, another Technology Recipient (TR), Raj was selected for the training. Both TRs would also be occupied with process writing, auditing and assessment activities, almost 90 days in all – still a small price compared to the harrowing past six months. With the programme internal kickoff on 29th April 2005, there was a glimpse of light now.

Light at the end of the tunnel
Between 30th April 2005 and 12th April 2007

Despite some rescheduling and delays, the programme had moved on rather smoothly. Chiu and Raj had diligently rallied the troops to adhere to the processes, one at a time, project by project. Unfortunately benefits were not immediately evident. Hence, it was crucial to get all levels to soldier on and not abandon the initiative midway. Nevertheless, by 12th April 2007 when the CMMI appraisal result was published on the SEI website, tangible benefits had materialised.

From over 500 Program Fixes Required per year, the figures were reduced to 369 in 2005, then 261 in 2006. In 2007, Program Fixes Required was only 119, an overall reduction of around four times. Program Change Requests nearly halved from over 300 to 168 per year. Yet, headcount remained constant even with the increase in new installations. The achievement vindicated Chiu's single-mindedness.

In retrospect, the time lag before benefits become apparent for most software process improvement initiatives would derail many an implementation. Nonetheless, those who stayed the course would reap the benefits. Paradigm Systems stayed the course and advanced to maturity level 3 on August 21, 2009.

– In memory of Chiu Yee Weay

List of Winners	
Grand Prize	Goh Keng Yew *Paradigm System Berhad*
2nd Prize	Tariq Ali Mohd Kamal Wan Norimah Megat Ahmad *iPerintis Sdn Bhd*
3rd Prize	Raymond Chin *NCB TechVision Sdn Bhd*
Consolation Prizes	Edmund Eer *iTAc MSC Outsourcing Sdn Bhd* Humphrey Ho *Ygl Multimedia Resources Sdn Bhd* Jimmy Tan *N2N Connect Bhd* Joanna Hew *Macro Kiosk Bhd* Melvin Wong *Just Mobile Sdn Bhd*