

Software Executive Report

Notes from the Executive Council for Software Excellence

March 2008

Managing Global Development

Companies today cite numerous reasons for pursuing global development:

- ◆ Access to technical skill sets not readily available in their local/domestic area
- ◆ Access to educational background not readily available locally (e.g., science knowledge among Ukraine programmers seems much deeper than science knowledge of U.S.-educated programmers)
- ◆ **Better access to global markets**, including the offshore developers' understanding of their own markets
- ◆ Goal to match the workforce's geographic distribution to the market's geographic distribution
- ◆ Geographic diversification of work force (a desire to reduce concentration in one location)
- ◆ Desire to augment staff without hiring (for companies that are slow to add permanent head count)
- ◆ Ability to scale rapidly—it's much easier to add 400 people rapidly in India or China than it is in the U.S.

We discussed the lower hourly labor rates, which one person expressed as, "**The accountant's view vs. the engineering view.**" The rates by the hour are certainly lower in many locations. When the total cost with extra communication, collaboration, management, rework, and technical debt is factored in, the labor-rate differential disappears or even favors domestic development. (More on this later in this report.)

Situations in Which Global Development Doesn't Help

There are situations in which global development can work well and other situations in

which it is more problematic than domestic development.

Development that requires close customer contact is not a good fit for global development—unless the customers are in the same global areas as the development teams.

It's difficult to do real "emergent development" offshore, i.e., development in which the work is strongly exploratory—exploring new technology or new business areas. Global development works best when the problems are well understood.

User interface design still appears to be a competency that is harder to find outside the U.S. than some other skills.

The challenges of global development increase when work spans more than two sites. There appears to be a large, non-linear drop off in productivity as companies go from two sites to three, from three to four, and so on.

"Tactical outsourcing" (outsourcing on a one-project-at-a-time basis) is near-universally reported not to accomplish intended business objectives. The ramp up time required to develop efficient working relationships is

April ECSE Meetings

Managing Core Development

Also known as the "infrastructure" group, "platform" group, or "services" group, how do you manage the centralized group that writes the code that everyone else in your company depends on? How do you organize it, fund it, and staff it? How does it relate to other groups? We'll compare notes on these issues and more at our April meetings.

Bellevue Meeting: April 14, 5:00-7:00 pm.

Dial-in Meeting: April 18, 8:00-9:00 am, PDT.



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simply too long to get to a positive ROI in a one-shot outsourcing relationship.

Where is Global Development Occurring?

ECSE members reported development occurring throughout India, China, The Philippines, Russia, Ukraine, Czech Republic, and Mexico.

Some companies have also experimented with low cost development centers in the U.S., i.e., in traditionally rural areas. Labor rates can be excellent in those areas. Depending on how rural the area is, ability to staff up is limited by a small talent pool in those areas.

Several companies reported **success in selective use of a small number of rural staff**. For example, acquiring a company and allowing a key contributor to telecommute. Most reported that this relationship can work indefinitely, as long as it's supported by face-to-face time.

“When you see mistakes start to increase, it's time to put people on airplanes for more face-to-face time.”

Total Cost of Ownership (TCO) of Global Development

The total cost of ownership of global development includes numerous expenses that are often overlooked:

- ◆ Monitoring offshore performance
- ◆ Coordination overhead at each site
- ◆ Travel costs both directions
- ◆ Communication costs both directions
- ◆ “Do overs” — for mistakes caused by less effective communications
- ◆ Multi-site/international tool licenses (can be problematic in some countries)
- ◆ Latency in communication and decision making — “you have to wait for the guy to come in tomorrow, and if he misunderstands your

ECSE Calendar 2008

April	Managing Core Development
May	Special Issues in Managing Technical Personnel (aka “Guru Management”)
June	Balancing “Doing” with “Improving”: Improvement Strategies
July	Supporting Innovation
August	Summer break
September	Issues in Test Management
October	Compensation Updates
November	Improving Productivity
December	To be announced

question, then it ends up taking 3-4 days to get an issue settled.”

In addition to these costs, there are **indirect costs caused by wear and tear on both the onshore and offshore staffs**—in particular, frequent early meetings or late meetings required by time zone differences.

In total, the Cocomo II estimation model suggests that global development of a project increases effort 40-50% over single-site development; companies would do well to factor this effort increase into their TCO models for global development.

Other Things to Watch For

Usability of code produced offshore can be compromised if comments are written in a language your onshore developers can't read

Be careful to preserve onshore technical capabilities. Some companies have reported needing to pull part of their software back onshore but no longer having any onshore staff capable of working on that part of their system.

Software Development Lifecycles That Work Well with Global Development

Most companies appear to be doing the majority of their global development using traditional development models—the waterfall model or

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About the Software Executive Report

The *Software Executive Report* is published monthly by Construx Software, 10900 NE 8th Street, Suite 1350, Bellevue, WA 98004. To subscribe to the *Software Executive Report* or for copies of past editions, please contact us at ecse@construx.com or by telephone at +1 (866) 296-6300.

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one of its cousins. Most companies reported some degree of experimentation with Agile approaches (most frequently Scrum), but the general consensus at this time seems to be that the **predictability afforded by waterfall-like models is important for global development.**

One company reported success doing “waterfall” development in 8-week increments. Of course this could be described from a Scrum perspective as a lengthened sprint. Reports from ECSE companies as well as other companies have generally indicated that **Agile approaches work well for global development when properly adapted**—the hybrid approaches end up being part Waterfall and part Agile, with some companies call their hybrid approaches “agile” and some calling them “waterfall.”

Special Issues with Outsourcing

ECSE members expressed a lack of confidence in any ability to truly vet a vendor without trying a project with that vendor. “It’s possible to talk a good game for quite awhile.” One suggestion is to try a vendor with off-the-critical-path tasks first.

Other suggestions included looking at resumes for key technical staff (architects and leads) insisting on key staff being assigned 100% to your project, and having your own staff conduct technical phone interviews of the vendor’s staff.

One company cautioned against giving the same outsourcing firm responsibility for both development and QA: “It’s too much like letting the fox guard the chicken coop.” You can outsource development to one firm and QA to another, and then you’ll need to coordinate both domestically.

“It seems to be very easy to simulate testing as opposed to actually testing.”

Cultural Issues in Global Development

At this point cultural issues of working in India seem well known. The group observed that **company culture issues can be as significant as national culture issues**, so it’s important not to assume too much about the effect of any particular national culture.

Holiday schedules are a common challenge. Summer holidays seem to rotate across companies, especially throughout Europe, so that it’s difficult to coordinate multiple sites during the summer months. Indian holidays don’t seem to line up very well with U.S. holidays or European holidays, and there are more of them, and that creates challenges too.

Keys to Effective Communication

Miscommunication appears to be one of the huge cost drivers of global development—if not *the* cost driver—so supporting rich communication is one key to success.

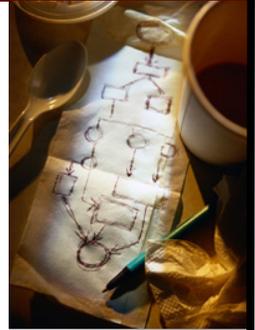
- ◆ You can use IM, if everyone’s awake at the same time
- ◆ Groove, SharePoint, Team Foundation Server are commonly used
- ◆ Teleconferences, especially using Skype/VOIP; one company reported that “we have paid long distance charges in years”

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About the Executive Council for Software Excellence (ECSE)

The ECSE is an executive discussion group hosted by Construx Software. Meeting monthly since 2002, the ECSE’s goal is to share, analyze, and evaluate members’ experiences facing enterprise-level software development challenges. ECSE members are executives with multi-project, enterprise-level responsibility for software development. The typical member oversees activities of 100 or more software personnel. The ECSE has a few members who oversee smaller staffs.

If you are interested in joining the ECSE or if you know someone who would be interested, please contact the ECSE host, Steve McConnell, at stevemcc@construx.com or (866) 296-6300.



About Construx

Since 1996, Construx Software has provided industry-leading support for software development best practices. Through our combination of seminars, consulting, and resources & tools, we have helped hundreds of software-intensive companies better achieve their business goals.

For more information about how we can help your company achieve its business goals, please contact us.

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- ◆ Companies made very little use of video conferencing—slow-motion video seems to be distracting enough that voice-only is often preferred, and bandwidth can be very expensive for the offshore location
- ◆ **Face to face time is essential.** There's a big difference between talking to a voice on the other end of a phone line vs. talking to someone who's had dinner at your house and whose family you've met.

Other Challenges

Staff retention in India continues to be a problem, with many firms reporting turnover in excess of 20%.

Global development generally appears to increase end-to-end development time. In years past companies reported some success with "follow the sun" development, but currently most companies are reporting that the idea of developing at one site and testing in the off hours at the other site hasn't worked best. It's better to develop and test at the same site, giving that site responsibility for specific components/modules/subsystems. As one company said, **"Think about the communication bandwidth across the interface, and try to minimize the size of the interface."**

Some companies report success having the offshore firm run in two shifts to maximize overlap with onshore staff's office hours.

Ramp up time of the offshore relationship can be significant. **Most firms report that it takes on the order of two years to complete the transition to working effectively with an offshore site.**

Salvaging Global Projects Gone Bad

It is normally not practical to pull the plug on a project gone bad, so the typical response seems to be to send more people from the domestic site to the offshore site, and then resolve not to do the next project offsite.

Warning signs of impending problems include unclear status reports from the remote site, missing delivery dates outright, or delivering with low quality. In all cases, the earlier corrective action is taken, the more effective it will be.

"The cost of partner monitoring is less than the probability and impact of partner failure."

Editor's Note: Global Development is Maturing

I was struck during our conversations by how much our understanding of global development has improved in the past few years. The days of jumping into offshore outsourcing based on rosy, naïve expectation of dramatic cost savings appear to be largely over. Companies are engaging in global development with better understanding of the real benefits, range of options, complete costs, and extent of challenges—and as a result companies seem to be achieving their goals more often.

— Steve McConnell

Construx and Global Development

Construx has supported companies in countries including India, China, Mexico, England, Ireland, France, Germany, Switzerland, Austria, Denmark, Norway, Finland, Hungary, Romania, Spain, and other countries as well as throughout the U.S. and Canada. For information about how Construx can help your global organization, please contact us at consulting@construx.com or +1 (866) 296-6300.

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