

Dispersed Software Development Pragmaticomm's experience

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Pragmaticomm - some context

Pragmaticomm Limited is a small consulting firm specialising in mobile and communications oriented software development. We are happy to be hired both as advisors and developers.

Pragmaticomm Limited was incorporated in 2005 and is registered in England & Wales, reg. no: 05354766

What we do

- Mobile Software Development
 - iPhone & iPad, Android, Symbian OS, Samsung bada applications
 - Mobile VoIP applications, communications related projects, recommendation systems
 - Apps that integrate with web services
- Web Applications Development
 - Web front-ends to database backed apps, recommender systems, services to mobile phones that need to connect to web and other backend systems
 - Open technologies such as Linux, Ruby, MySQL, Nginx, HAProxy, Sequel, Ramaze
 - Artificial Intelligence and Machine Learning for information filtering

What we do for example...

- Requirements gathering
- Consultation on UI, usability and overall concept design
- Server-side development and integration to the mobile apps
- Testing, QA
- Server side and app design documentation
- App-store submission

Who we are

Dimitris Kogias

15 years experience in enterprise and mobile software at Reuters Plc, TIBCO Inc, Amazon.com Inc and Pragmaticomm Limited

Dimitris Papanikolaou

11 years experience in embedded and mobile software development at Xerox Europe Plc, Xerox US R&D, Metropolis and Pragmaticomm Limited

Dr. John Pagonis

12 years mobile software and content recommender experience at Ericsson, Symbian Ltd and Pragmaticomm Limited

Lucas Maneos

20 years as freelance IT systems administrator and security consultant and at Phaia Limited and Pragmaticomm Limited

Work highlights

- Mobile VoIP (SIP stack, as well as full app development)
- Content-based recommender for news and textual content filtering
- Ruby 1.9 Virtual Machine porting and extension
- Telecom billing system integration for pay as you go VoIP services
- Personalised digital magazine (user profiling and integration to CMS)
- News filtering

...all in dispersed mode

- We started in 2005 on the premise that we would have a team of selected people independently of where they were based.
- We wanted to work on interesting projects across the world
- We didn't want to spent money for rent in central London at the time
- Team members based in London, Seattle, Nice, Thessaloniki at the time
- We were all experienced enough and had started using the internet in the eighties so....
- ..all we had to do was build the infrastructure....

Influences

- Research on Organisational Patterns (cf James O Coplien Lucent Bell Labs)
 - “Organizational Patterns of Agile Software Development”, by James O. Coplien and Neil B. Harrison,
- Agile software development (and unfortunately other disciplines)
- Experience working in solo, small (<10 people) and large (>10 - 1000 people) teams and projects

Question ?

Which is the most difficult way of developing complex software as a team?

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Answer:

Having team members working in their own room across timezones!

Dispersed development

**Is the most difficult way of developing
complex software as a team!**

but why?

Dispersed development

**Is the most difficult way of developing
complex software as a team!**

but why?

Because software engineering is all about people!

**The most difficult thing in software engineering is building
maintaining and running a high performance team!**

Dispersed development

Yes, it is possible!

Yes, you save time from commuting

Yes, you don't have to pay rent for an office downtown

Yes, you can have people working from wherever they are based

It can be rewarding

But it is not easy.

Some advice

At Pragmaticomm we've worked at times with projects where the team (including the client) members were dispersed across 3 continents. At other times we were all within the same timezone.

The most extreme scenario involved a dispersion from US west coast to Singapore with members in Brazil, Iceland, Norway, Austria, UK and Greece.

We work on projects that run usually from few months to a year.

...following is some advice :-)

1. Have infrastructure that supports your team

e.g, at Pragmaticomm we have a secure infrastructure that supports

- * A wiki - shared with clients securely
- * Defect reporting - shared with clients securely
- * Instant Messaging / Presence
- * Emails (IMAP-IDLE over TLS/SSL)
- * VoIP (unencrypted or over TLS) and PSTN switching and conference bridging
- * Source Configuration Management - shared with clients securely
- * Discussion groups - shared with clients securely
- * Secure messaging and presence with clients
- * Stand-by server offsite and remote backups of course!!!

Have a look at Trac, Redmine, Jira, Redmine for example...

2. Use your infra above all for communication

Have a technical discussion forum / mailing list

Have a forum for “general” discussions

Post reviews from events you attended

Report on client meetings for the record

Have a search facility for the above to refer links in follow-up discussions

Make it easy and free to pickup the (VoIP) phone

Make it is easy to have conference calls with your team and clients

3. Architecture follows location

Whether you like it or not the architecture will follow the location of the developers involved.

You know that, so partition the architecture accordingly.

When you know that this is wrong, take the hit and admit to it early.

4. Pick up the phone

Have a VoIP soft/phone on your desk or on your mobile at all times

Email is bad for what can be solved synchronously via voice comms. IM is even worse, especially if you are irritated with something/someone.

Calling someone can (fortunately/unfortunately) convey emotions in such a way as for the parties involved to adapt accordingly. Email/IM is bad when there are problems, unless they are used to accurately describe facts that need careful digestion.

Both synchronous and asynchronous modes can and should be combined though it is always good to talk!

5. Lock'em in together

You'll need to meet face to face and stay in a room for some time (even for days) to solve complex problems - do it! It is good for speeding up, finding solutions, coming up with ideas, planning and motivation.

It is also good for relations and team building - you WILL avoid conflicts this way and you'll speed up.

Do this with clients as well !!!

5. Meet regularly face to face

Meeting face to face solves many problems and must be done regularly. How regularly depends on dispersion and location. We have found that flying people from two continents every 2-4 months is excellent.

If you are in the same city do it every other week at least.

This will give you pace and will get you less secluded.

You don't have to make it only for work. It can be just for fun.

6. Use IM for presence not for IM!

Don't use instant messaging for communicating that needs to go on to a discussion thread for everyone to review or on an email.

Don't use IM to report problems, bugs or problems (unless they are transient).

Use IM for showing your status to your colleagues (i.e Developing, on the phone, Lunch, Debugging, Away, etc). This will give them a sense of presence and also information about when they should interrupt you and when not (i.e when debugging)

7. Communicate through your code

Communicate through your code and let your clients see this

Team members and clients feel more relaxed and engaged when they see a code timeline progressing!

For example we use Trac internally and with clients where everyone sees the code of the project, defects and documentation as we go along.

We also use Trac (and other clients' systems) for formal code reviewing as well as when code is committed.

7. Daily sync-up

Daily sync up - something like a Scrum stand-up meeting via email. If you are not dispersed across timezones also do it via a short conference call.

We answer an automated email every morning that serves everyone across timezones with the following:

What did I do since last time ?

What will I do today ?

What impediments do I have ?

The important part is for team members to address the latter part immediately.

This also makes a good log book for the team and clients.

8. Do have a (home-)office

Make sure that you have an appropriately set-up office when working from home and that everyone knows what your office time is!

If you can't have one, then go to a shared office.

The worst thing is when the environment for doing something so complex is hostile and someone interrupts you because “you're at home in front of the computer”.

9. Have office hours!

When you work from home, it is easy to forget to stop working!

Make sure your home office has a door, which you'll need to close behind you when you finish work.

Working from home will allow you to totally concentrate and stay in the flow for long days. which is excellent....BUT do not over do it.

10. Get out!

Go to events and conferences as much as possible

Avoid seclusion. When you feel like you need to work with others try to co-locate yourself with team members for a while. If it is not possible try a collaborative workspace.

Make sure you meet and talk with other practitioners often.

Visit clients.

Thank you :-)