Global Software Development Process Assessment

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Author: Sarah Beecham

Preamble

This document contains an assessment form for measuring an organisation's capability to conduct Global Software Development. It is adapted from the recommendations given in [1] and [2]. The assessment has been applied in GSD organizations, large and small (e.g. [3] and [4] (page 102)).

This survey is intended for use by software practitioners operating in a globally distributed setting. The outcome of this survey provides an assessment of the strength of a company's global software development process. Ideally this survey should be completed by several members of a project team to compare and contrast responses.

There are two sections to the survey. Firstly there is a list of response categories, followed by a set of questions relating directly to recommended global software development practices.

Global Software Development Process Assessment Survey

There is no obligation to complete and return this questionnaire. We assure you that if you decide to help us with our research that your responses will be treated with complete confidence, and no individual comments will be disclosed. All results will be aggregated, and your name and the name of your company will not appear in the results or any published report unless you expressly give us your permission.

Thank you in advance for your time and support in this research.

For any queries please contact Sarah Beecham sarah.beecham@lero.ie

Instructions – Response Categories

Please go through list of practices in tables in this survey and rate the practice according to ONE of the following (just insert the number – e.g. if you have implemented practice A1 and it works fine for you, insert "1"):

1. Implemented, works well for me

2. Implemented, just working this way, not sure of its value though

3. Implemented, but needs improving as it is not effective in its current form

4. Implemented, but informally – wouldn't be able to tell you the precise process.

5. Started implementing, then stopped, planning to start when time (sporadic implementation).

6. Planning to implement in near future. – i.e. would like to implement but haven't yet.

7. Would like to implement but can't: Not implemented because my organisation does not have resources, or management won't approve (i.e. in an ideal world would like to, and know about it already, but cannot afford to do this).

8. Not implemented because I didn't know about the practice (i.e. now I know, it seems a good idea and appropriate for my needs; if in my remit will think about introducing this practice).

9. Not Needed: Not implemented because it is not necessary for my type of business (e.g., business is too small, don't have any problems that this practice would solve).

10. I don't really understand what the practice is advocating so cannot comment.

11. Any other comment? (Please write number of practice on separate sheet of paper and include your comments).

The next pages contain the practices that research shows will support organisations developing software across multiple sites.   Please rate each practice according to the response categories above (one response per practice).

SPECIFIC GOAL 1 Define Global Project Management	
Specific Practice 1.1: Global Task Management **Goal:** distribute tasks so that Global Software Engineering advantages are leveraged and negative factors inherent to its operation are minimised.	
Sub Practice A. *"Determine team and organizational structure between locations"*	**Rate Guideline:** ⇩ **1 - 11**
A.1 Create roles, relationships and rules to facilitate coordination and control over geographical, temporal and cultural distance.	
A.2 Structure global team and monitor operation to minimize fear and alienation in teams: • Be aware of problems with unbalanced team sizes; e.g., smaller teams may be threatened and fear job loss. • Team structure should cater for possibility of dual reporting to management at more than one location, e.g. team structure could be cross divisional or multi-organizational and management remote. • Ensure that supervision, support and information needs of all team members are met regardless of location. • Organizational structure should be documented and available to all team to allow a clear understanding of everyone's roles and responsibilities within the project.	
Sub Practice B. *"Determine the approach to task allocation between locations"*	
B.1 Identify and document reason for working with global team.	
B.2 Base task allocation on the organizational requirement, e.g., if proximity to market is reason development team is located in a particular country, then customer-related tasks should be allocated to that team.	
B.3 Retain tasks that require frequent communication between groups within collocated teams.	
B.4 Where Global Software Engineering teams are subdivided into work modules (e.g. different parts of the life-cycle), management must allocate tasks based on core competencies of each sub-team, and clearly define which stages are carried out at which location.	
B.5 Confidential software development activities that provide competitive advantage should be developed within organization.	
B.6 Related non confidential development activities can be undertaken by external remote team colleagues.	

Specific Practice 1.2 Knowledge and Skills Management	
Goal: Identify business competencies and skills of team so that the advantages of Global Software Engineering are leveraged and the negative factors inherent in the operation are minimized	
Sub practice C. "*Identify business competencies required by global team members in each location*"	
C.1 Document and define customer base and functions relative to the application being developed.	
C.2 Provide training to ensure that global team has required understanding of the customer base and the business functions to take full advantage of the proximity of the team to the customer base.	

Sub practice D. *"Identify the cultural requirements of each local sub-team"*	
D.1 Cultural diversity: Each team member should be trained to understand the culture of the global team.	
D.2 Face-to-face meetings are recommended when and where possible, ideally at the start of the project and/or when a new member joins.	
D.3 Having individuals visit locations for extended periods can also be a successful strategy and should be fully leveraged at every possible opportunity.	
Sub practice E. *"Identify Communication Skills for Global Software Engineering"*	
E.1 In order to develop the right practice, a new communication protocol needs to be set up. Policies should be put in place to support these new requirements to the satisfaction of all global team members. For example in synchronous communication, ensure that link up times are shared between core team working hours in each location.	
Sub practice F. *"Establish relevant criteria for training teams"*	
F.1 Effective knowledge transfer: Carry out evaluation of training needs to include cultural and linguistic issues.	
F.2 Undertake training onsite and face-to-face so team members can be directly assessed and training provision tailored to their specific requirements.	
F3. If working in regulatory domain, provide training on regulatory requirements and procedures.	

Specific Practice 1.3 Global Project Management **Goal:** To plan, facilitate, implement and monitor global communication and coordination of related activities with effective policies and procedures.	
Sub Practice G: *"Identify Global Software Engineering project management tasks"*	
G.1. Define ability and potential productivity of team: Global project manager should allocate tasks and timescales that are realistic.	
G.2. Where possible, the project manager should be actively involved in the recruitment and selection of team members. Failing this, they should gather all information relating to the technical and professional experience of potential and existing team members.	
G.3. When teams are in place and project details reported, project managers should understand and document how individuals contribute to that project along with their skills and knowledge.	
G.4. Plan for lessons learned to be recorded during the project and reviewed at the end by all project team members. Update procedures based on this experience.	
G.5. Identify issues from lessons learned that require a wider initiative such as a change in organizational culture and report to a global change management agent.	
Sub Practice H: *"Assign tasks to appropriate team members"*	
H.1. Assign according to one or more of three different approaches; Modularization; Phase-based approach; and Integrated approach. *Modularization*: partition work into modules which have a well-defined functional whole; *Phase-based approach*: Use when phases of the development cycle are relatively independent. Ensure that the team members developing a specific phase have a good understanding of what is required at each specific stage; *Integrated approach*: Set up a protocol to allow handover from one geographic location to another to ensure a successful follow the sun development.	

Sub Practice I: "*Ensure Awareness of cultural profiles*"	
I.1. National cultural differences should be identified and communicated to the management and team members. Cultural training can be communicated in the following ways: • Provide training to give all team members an opportunity to learn and understand about each other's culture. • Address national, religious and relevant ethnic issues, all team members should understand acceptable and unacceptable forms of behaviour. • Training should be tailored to team member's specific needs and location.	
I.2. Project managers should ensure that cultural profiles for teams are established. E.g., Management and staff should show respect for gender-related cultural values of all colleagues. All employees' legal rights must be upheld.	
Sub Practice J: "*Establish cooperation and coordination procedures between locations*"	
J.1. Ensure that a suitable infrastructure, process and management procedures are in place to help establish cooperation and coordination between locations.	
J.2. Achievable milestones should be planned and agreed. Projects should be monitored with reference to costs, time, productivity, quality and risk.	
Sub Practice K: "*Establish reporting procedures between locations*"	
K.1. Regular formal reporting will help the project manager to remain aware of how project is progressing.	
K.2. Procedure should include and encourage team members to report whether or not they can take on that task in the given time and report any problems before it is too late.	
Sub Practice L: "*Establish a Risk Management Strategy*"	
L.1. All potential risks should be identified and addressed to include: risks in misunderstanding cultural differences, misunderstanding requirements, feature volatility, schedules, budgets, personnel.	
L.2. In addition, risk associated with outsourcing activities to politically unstable locations needs to be identified.	
L3. Identify and address local project demands that may pose a risk to the global project.	

SPECIFIC GOAL 2 Define Management Between Locations

Specific Practice 2.1 Operating Procedures
Goal: Set up operating procedures for effective collaboration between locations

Sub Practice M. *"Define how conflicts and differences of opinion between locations are addressed and resolved"*	
M.1. Set up a strategy to handle, monitor and anticipate where conflict between remote locations may occur. The strategy should include how conflict will be resolved and how a person responsible for that resolution is selected.	
M.2. When defining the global strategy for dealing with conflict, different types of conflict have to be taken into account, for example conflict due to fear as well as cultural differences.	
M.3. Establish criteria for global projects based on global strategy and vision to guide decision making.	

Sub Practice N: *"Implement a communication strategy for the team"*	
N.1. Plan, facilitate, encourage and monitor communication between teams.	
N.2. Provide training on how best to communicate with remote colleagues, including the effective operation of communication tools and procedures.	
N.3. Consider linguistic and cultural implications inherent when communicating remotely.	

Sub Practice O: "*Establish communication interface points between the team members*"	
O.1. Introduce strategies that encourage both formal and informal reporting.	
O.2. Ensure that relevant team members are made aware of how and when they will receive inputs to products they are working on, and when they need to distribute outputs from these products and when complete work products are required.	
O.3. Ensure teams are aware of potential constraints such as legal restrictions and holidays in countries within which they are developing the product.	
O. 4. Ensure that Information about each team member is easily accessible by colleagues. Information of an individual's role within the team and their specific areas of responsibility should be combined with a photograph, their first name, surname, friendly name (if appropriate) and their preferred form of address.	
O.5. Use intranet and/or wikis to create communication interface points between team members.	

Sub Practice P: *"Implement strategy for conducting meetings between locations"*	
P.1.Ensure appropriate global meeting technology is made available to all team members and is used.	
P.2. Try to ensure all participants are comfortable with global meeting and are given opportunity to agree or disagree with points raised, and offer new ideas.	
P.3 Circulate agenda prior to meeting, and clearly minute actions agreed a meeting.	
P.4 Ensure that no delay occurs between the meeting and the circulation of minutes as people may be waiting for the minutes before implementing the actions.	

Specific Practice 2.2. Collaboration between locations **Goal**: Develop a motivated and focused team who share a common purpose and objectives.	Rate Guideline: 1,2,3, 4, 5, 6 or 7
Sub Practice Q: "*Identify common goals, objectives and rewards for the global team*"	
Q.1. Global Project manager sets project goals and objectives.	
Q.2. Goals at project level are common to all locations.	
Q.3. Project goals and objectives communicated, understood and agreed across all team members regardless of location.	
Q.4. The global team is viewed as an entity in its own right, regardless of the location of its team members and its performance should be judged and rewarded accordingly.	
Q.5. Acknowledging team success may require tailoring rewards to the needs of different cultures.	
Q.6. Project Managers need to understand the cultural motivation of the different team members and identify and apply appropriate rewards in each situation when and where relevant.	
Q.7. Consideration should be given to cultural issues, economic situation and income tax laws when planning rewards.	
Sub Practice R: *"Collaboratively establish and maintain work product ownership boundaries"*	
R.1. Define product ownership boundaries through partitioning of work across Global SE teams.	
R.2. Each location should understand their role within the life cycle of the product.	
R.3. Each location should understand how their modifications to the product unit can affect the other locations.	
Sub Practice S: *"Collaboratively establish and maintain interfaces and processes"*	
S.1. Define common process goals across all locations.	
S.2. Define process ownership – placing ownership with those closest to process where possible.	
S.3. Seek and encourage input from team members at all locations.	
S.4. Let team members know their input to process development and ownership is valued.	
S.5. Processes should address specific challenges associated with Global Software Engineering.	
S.6. Processes should take into account the relevant structures and procedures from all sites.	
Sub Practice T: "Collaboratively develop, communicate and distribute work plans"	
T.1. Achievable milestones should be planned and agreed.	
T.2. Within the commitments made, team members must explicitly include communication plans to include use synchronous and asynchronous communication tools.	
T.3. Contingency plans should be in place to address potential risks.	
T.4. Establish procedures to coordinate implementation of contingencies when and if required.	

SPECIFIC GOAL 3 Define Global Regulation Management	
Specific Practice 3.1 Global Regulatory Requirements **Goal**: Ensure that Regulatory Requirements are included at start of project	
Sub Practice U. Establish a risk management strategy for regulation (if working regulated domain)	
Sub Practice V: Collaboratively plan, develop and validate systems and changes	
Sub Practice W: Coordinate for traceability of requirements.	

End of list of Practice in the Global Teaming Model.

Further information:

Having read through all the practices, are there any practices you feel are missing that you would like to implement? (Please use box below and continue on a separate sheet should you need more space: List up to three new practices that relate to your business needs and are specific to working across global teams/multiple sites).

Additional comments/additional practices:

Demographic Questions

1. What is your current role? _____

2. How long have you worked in Ocuco? _____ years

3. How long have you worked in Software Engineering/Development? _____ years

4. What is your personal core expertise?_____

5. In what country are you based? _____

6. Why does your organisation develop software across global distances? _____

   _____

7. What is the size of your organisation size (no. of people in organisation): _____

8. How many years has you organisation been operating / year of launch?   _____

9. What software does your company develop?

   a. domain?   _____

   b. type of application?_____

10. Does working in your domain require you to comply with any regulations? Yes/No /Don't Know

    a. if Yes, who are the regulatory bodies you have to work with? _____

    b. do you need to prove you comply to the regulations in the WAY you develop your software? (e.g. traceability from requirements through to release, type of testing, etc). Y/N

    c. Or are the regulations viewed as (non) functional requirements (e.g. must have a level of quality, security, data protection, privacy, hard coded rules, etc).   Y/N

11. Is the software you develop bespoke – tailored specifically to the needs of one customer, or is it COTS (for general sale)? Or Hybrid? Software Product Line? Please classify: _____

12. Who are the end users of your software? _____

13. Who are the customers (i.e. who pays for the software)? _____

14. Who owns the final application? I.e. do you license the software and retain the IP? _____

15. How many people are directly involved in developing software? _____

16. What is the size of your team? _____

17. Which countries does your team operate in? (in developing software including requirements gathering, testing, coding design, etc):

_____

18. How many countries does your team operate in? (sum above)_____

19. Are you co-located with some of your team? Y/N. If no, do you work from home? Y/N.

20. Do you offshore or outsource your software development (or both)? _____

21. Does working in different **time zones** impact your operation? Y/N,

    a.   if Yes, How? _____

22. Does working with people who have **different first languages** impact your operation? Y/N, if Yes, what is the impact? _____

23. Have you had any problems associated with different **cultural behaviours** in your team? Y/N, if Yes, what problems have you had? _____

24. Does the **geographic distance** between team members cause you any problems? Y/N, if Yes, what are the problems?

_____

For any queries please contact Sarah Beecham: sarah.beecham@lero.ie.

Future contact and privacy:

We will not contact you unless you consent to one or more of the following:

25.   Would you like to see the results of the survey (Y/N)?

26.   Can we contact you again if we need any clarification on your responses? (Y/N)?

If you have answered "Yes" to either of the questions above, please provide an email address here:

My email address is: _____

Please be assured that we will not reveal any company details, or details of any of the individuals who have participated in this survey.   All your responses will be treated as confidential. Results will be aggregated and anonymised.

References

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