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What You Should Know about Crystal Orange Methodology
#6 of a Series, by Pavan Kumar Gorakavi, M.S., M.B.A, G.M.C.P, C.A.P.M.

Agile denotes nimbleness, a light-weight systems development methodology, based on iterative development where solutions evolve from tightly collaborated cross-functional teams. In early 2000, many people were having difficulty identifying a methodology that delivered a product quickly and with good responsiveness. A group of Industry experts formed an alliance called the **'Agile Alliance'**. Over two days they worked to create statement of value, which resulted in the Manifesto of the Agile Alliance. Over next three months they formulated the principle of agility.

The Crystal family of methodologies includes a wide variety of methodologies for each individual projects. Crystal family relies on incremental development cycles, wide communication flow, and good collaboration. The three crystal methodologies which got high acclamation are Crystal clear, Crystal orange, and Crystal orange web (Cockburn, 2002).

Crystal Orange is a project management methodology that belongs to the Crystal family. Crystal Orange is designed for medium sized projects which range from 10-40 team players. A Crystal Orange project has duration ranging from one to two years. A Crystal Orange project is typically split up for several teams with cross functional groups. The concurrent teams help address the issues of time-to-market (Abrahmsson, Salo, Ronkainen, & Warsta, 2002).

Principles of Crystal Orange

Crystal Orange underpins seven common principles during the development process. They are illustrated in figure 1.

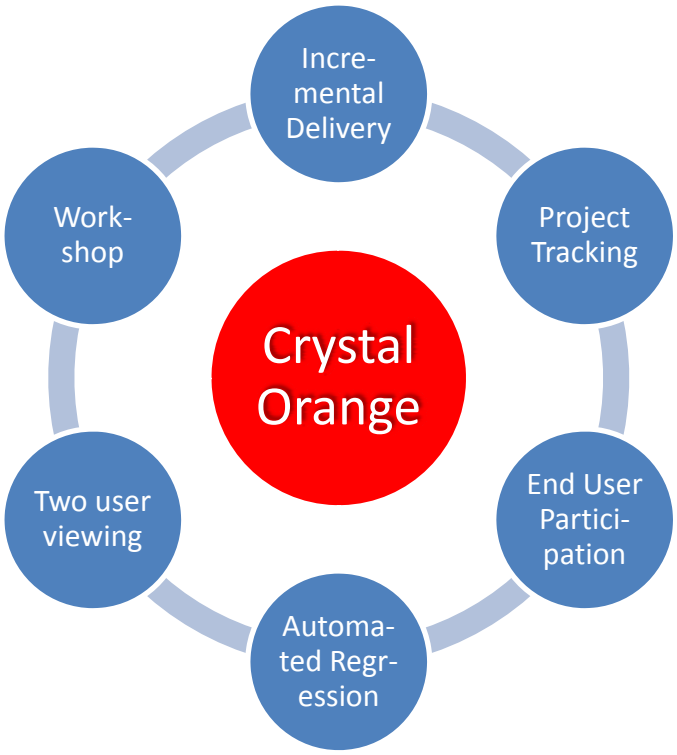

Figure 1: Principles of Crystal Orange

Crystal Orange work products include release sequence, common object models, user manual, test cases, and migration code. Crystal Orange requires requirement documents. Crystal Orange implementation applies approaches such as versioning, testing, communication, and project tracking. Crystal Orange selects different standards notation, design convention and quality management.

Activities of a Crystal Orange Increment

A Crystal Orange increment includes activities, such as staging, monitoring, reviewing, parallelism, holistic diversity strategy, methodology tuning, and reflection workshop. These are illustrated in figure2.

Figure 2: Crystal Orange Activities

Staging

Staging includes planning for the subsequent sprints. This planning needs to underpin the concept of incremental development: A product release every 3-4 months. In this phase the Crystal team analyzes the requirement, identifies technical feasibility and prioritizes the tasks. The Crystal team develops the product based on the priorities.

Review

Objective reviews are performed in this phase. Each increment includes several iterations. A sample increment is illustrated in Figure 3, below.

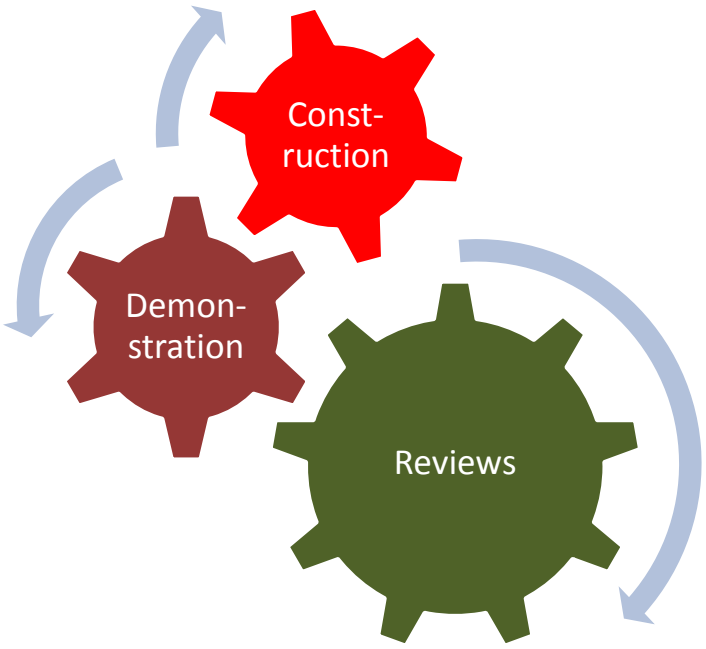

Figure 3: A sample increment

Tracking

Tracking a project at different stages of the game plays a vital role in reducing the refactoring cost. Project statistics are tracked and monitored by considering the team deliverables during the development process. The progress is measured in milestones and stability stages. Different stability stages include *wildly fluctuating*, *fluctuating*, and *stable* (Abrahmsson, Salo, Ronkainen, & Warsta, 2002). Different milestones include start, review, test and deliver.

Tuning

This methodology uses project interviews and workshops to work out a solution. The phases track and record performance metrics for a given increment, and use historical information for subsequent increments.

Parallelism

Once stable system is developed to review, Crystal Orange recommends with maximum parallelism successfully. In order to achieve parallelism, the monitoring and architecture teams review their work plans, stability and synchronization (Cockburn, 1998).

Diversity

Holistic diversity is a strategy of splitting large functional groups into cross functional groups. This methodology develops specialized groups. The holistic diversity strategy allows to grow specialized know how groups.

Workshop

Crystal Orange recommends post and pre increment workshop in order to drive team attention towards projects goal.

The Crystal Orange Team

Crystal Orange suggests a wide range of key roles, grouped into several teams such as Planning, Mentoring, Architecture, Mentor, Technology and Test Teams. Crystal Orange includes a UI designer, Database Engineer, Architect, Programmers, Testers, Design, Reuse Point, and Writers. As Crystal Orange includes parallel teams working at the same time, a player can work in different functional groups in different roles. A Reuse Point is a role that identifies reusable software component. Writer is responsible for creating documentation.

Conclusion

Crystal Orange can be effectively used for a medium-sized project where resources are co-located in a single office building. Though Crystal Orange lacks sub-team structure, it can be well suited for a medium sized project.

Bibliography

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About the Author

Pavan Kumar Gorakavi is working as a Senior Software Developer in Dallas, TX. He is settled in Dallas, TX with his family (wife Swapna Gorakavi and son Anish Gorakavi). He is VP - programs for *asapm* Young Crew. He is also acting as Associate Director [Marketing] for PMI-ISSIG. Pavan earned his Bachelor's degree in computer science from Jawaharlal Nehru Technological University and Masters in computer science from Lamar University. He did his MBA from University of Texas at Dallas and GMCP from Southern Methodist University. Pavan holds SUN, IBM and PM Institute certifications.

Pavan Gorakavi authored a book on 'Artificial Intelligence' published by Rahul publications - India, and 'Digital Electronics' published by Subhash publications, India. His research interests are Artificial Intelligence, Agile methodologies, and Software development in ADA, Prolog and Java. You can reach Pavan at gorakavi@gmail.com .

About this Series

This article is the sixth in a series posted on the *asapm* website by Mr. Gorakavi on Agile Methods. Watch for the others in the series. And, although the concepts of Agile are most-common in Software Development projects, increasingly Agile and Lean PM methods are also turning up in many other project areas, including Engineering and Manufacturing, where some assert they actually originated.