

## **Resource Capability Relevance Index (RCR Index)**

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Resources are the most critical elements in a project. The availability of right resources at the right time does affect the progress of the project. The availability of resources required at various stages of the project is usually tracked. However, the availability of right resources / performance of the resources is not measured and reflected, which will be a potential threat to the effort, schedule of a project.

Tracking a project and knowing to attack at the areas that may affect the effort, schedule of the project is a very important attribute of the project manager. There are several tools, parameters that will show the direction in which a project is progressing. The RCR index is an effort in that direction.

Project Resource Planning – especially is very critical in software projects as the right resources are required at the right time. To know the kind of available resources working in a project is essential. All project managers will agree that not all resources work with the same level of productivity and capability. It is not enough to have head count alone in projects, but to have resources that do count towards the targets in the project. A resource in the project may be very capable, but is the resource's capability relevant to the project, is an important consideration that is often not focused till problems surface during the progress of any project.

More than the infrastructure for software projects, the availability of resources and in the required capability is a very important factor for the success of the project. As any project during its progress is measured for effort variance, schedule variance and the like...it is often missed out that the non-availability of the right resources will affect the schedule and effort leading to ultimately affecting the whole project.

The RCR Index (Resource Capability Relevance Index) is an effort in that aspect to ensure that the resources capability is well highlighted as part of the project tracking. This helps in giving a warning that some further tasks in the project may go wrong and variance may result in the areas of effort, quality and schedule. The objective is to quantify the capability relevance of the resources in the project and mention them in project status tracking.

A fully capable resource is considered as having a value 1. Productivity is not the only factor considered for arriving at the value of a resource but also the quality of output of the resource. The attributes at arriving at the value of the resource will solely depend on the type of the project and the scenarios surrounding the same.

The idea is to associate the attributes (like productivity, quality), which hinder the project performance, which are directly related to the performance of a resource and associate a value to the resource, which will give clear visibility on the problems ahead.

There are various stages in a project (not an exhaustive list, an indicative list) like Requirements, Design, Coding, Testing etc....and the project plan is done for resources required on what date and for which stage.

Reqd Date	Requirements	Design	Coding	Testing
12/12/2005	3	1	--	--
15/01/2006	--	2	15	--
Expected Value	3	3 (or may be 3+3)	15 (or may be 15+3+3)	--

In the above example, the expected RCR Index of resources at each stage is given – based on the resources required date and project status reporting date. In case 1 of the 3 resources in requirement stage is not capable to 100% and capable only 80%, the value will be  $1+1+.8 = 2.8$  Which calculates the RCR Index =  $2.8 / 3 = 0.93$  any value less than .9 highlights a potential problem ahead in effort, schedule. However, this value is highly subjective to the specific project in which a project manager has to decide the problematic value level (say .9 or .8 etc...).

RCR Index is defined as –  $\frac{\text{Value of available resources}}{\text{Expected value of resources}}$

Based on the value defined, the traffic lights system of highlighting can be used, wherein a project manager can define, that if the RCR Index value is less than .8 it is RED, less than .85 & > .8 - AMBER and less than .9 & > .85 - GREEN. This is indicative only.

At a later point, if both requirements, design phases are in progress parallelly, then the total expected value of resources will be  $3+3 = 6$  (can be less also, if some resources are not required in the design phase, who have already completed requirements and will be joining the project at a later stage)

And if the problem of 1 resource in requirements is coupled with non-availability of 1 resource for design and also 70% capability of 1 resource in design, then the RCR Index works out to –

$2.8 + (0+1+.7) = 2.8 + 1.7 = 4.5 / 6 = .75$  – which indicates a potential problem at hand

Apart from the individual resource count, there will also be a project level resource count (across all stages),

Example – if there are 5 resources at a stage of the project the RCR Index should be 5 – anything less than 5 is a potential threat / problem.

The above stages are a representative stages in a project, there can be much more stages based on each project.

The factors at arriving the value of a resource is not detailed, as it will vary depending on the project type and size. Productivity, Quality of output can be some of the measures of arriving at the value of a resource. Typically in a project, there may a resource who is not

performing as per expectations and this has to be tracked in the project status itself. Also the mere head count of resources doesnot help the project manager achieve the required objectives – like a fresh resource or a resource new to the process can never be counted with the full capability of what is required out of the resource. It does take time for the resource to get in to the process and certainly, the elapsed time for this gap will affect the project, which needs to be tracked and corrective actions taken.

All these factors have to be quantified and highlighted to have enough time to act to avoid variances.

On the one hand the RCR Index will highlight whether the right kind of resources are available and on the other hand it will give an advance warning for a problem ahead and can assist in taking the necessary corrective actions. This index value also highlights the non-availability of resources.

As certainly a resource(s) not capable of doing the job as per schedule and with the desired quality will affect the progress of the project, this has to be highlighted in project status tracking. The RCR Index is an effort in that direction to equip the project managers to highlight the resources perspective in this dimension.

The RCR Index is also a direct highlight to the Human Resource department, who were not much in the picture in this level of measure in a project status. This can also focus on the right areas of project resource management. All that was highlighted to the Human Resources department so far was the non-availability of resources.

To summarize, RCR Index is an effort in the on-going process of controlling the project progress to achieve the required targets and this measure will give the project manager and highlight the potential threats, problems ahead in the road of the project.