

How to Measure BCWP (Earned Value)

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Ricardo Viana Vargas is a project, portfolio and risk management specialist. During the past 15 years, he has been responsible for over **80 major projects** in various countries in the areas of petroleum, energy, infrastructure, telecommunications, information technology and finances, comprising an investment portfolio of over 18 billion dollars.

He was the first Latin American volunteer to be elected Chairman of the Board for the **Project Management Institute (PMI)**, the largest project management organization in the world with close to 500,000 members and certified professionals in 175 countries.

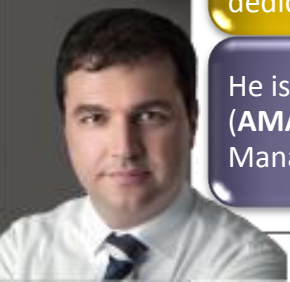
Ricardo Vargas has written **ten books** on project management, published in Portuguese and English, which have sold over 200,000 copies throughout the world. In 2005 he received the PMI Distinguished Award for his contribution to the development of project management and the PMI Professional Development Product of the Year award for the PMDome® workshop, considered the best project management training solution in the world.

He is a project management professor for various MBA courses, and actively participates on editorial boards for specialized journals in Brazil and the United States. Vargas is a recognized reviewer of the **PMBOK Guide**, the most important reference in the world for project management, and also chaired the official translation of PMBOK into Portuguese.

He is a chemical engineer and holds a master's degree in Industrial Engineering from UFMG (Federal University of Minas Gerais). Ricardo Vargas also holds a Master Certificate in Project Management from George Washington University and is certified both as a Project Management Professional (PMP) by PMI and as IPMA-B by the International Project Management Association. He attended the Program on Negotiation for Executives at **Harvard Law School**.

Over an eleven year timeframe, which began in 1995, Ricardo, in conjunction with two partners, established one of the most solid Brazilian businesses in the area of technology, project management and outsourcing, which had a staff of **4,000 collaborators** and an annual income of 50 million dollars in 2006, when Ricardo Vargas sold his share of the company to dedicate himself on a fulltime basis to the internationalization of his project management activities.

He is a member of the Association for Advancement of Cost Engineering (**AACE**), the American Management Association (**AMA**), the International Project Management Association (**IPMA**), the Institute for Global Ethics and the Professional Risk Management International Association (**PRMIA**).



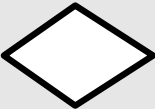
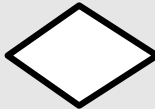
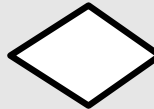
Measuring Earned Value (BCWP)

The way used to plan the project impacts directly on how its earned value (BCWP) is to be measured:

- Milestones with weighted values;
- Fixed formula by task;
- Percent complete estimates;
- Equivalent completed units;
- Apportioned relationships to other discrete work packages



Milestones with Weighted Values

- The work package is converted into two or more milestones, and each milestone is considered to be a partial delivery. The total sum of these milestones is the cost of the work package.

Pacote	Jan	Fev	Mar	Total
Pacote 1	 100	 25	 75	200

Fixed Formula by Task

- The work package is split into two parts that together make up 100% (25/75, 50/50 and 75/25)

Pacote	Jan	Fev	Mar	Total
Pacote 1				200
	50		150	

Percent complete estimates

- Attributes to each work package a percent complete estimate (between 0 and 100%)

Pacote	Jan	Fev	Mar	Total
Pacote 1	66,7	66,7	66,7	200

Equivalent completed units

- Earned value is calculated based on each full unit of work completed, and also for a fractional equivalent of a full unit.

Pacote	Jan	Fev	Mar	Total
Pacote 1 4,0/m ²	12,5 m ² 12,5 m ² 25,0 m ²			50m ²
	<div>↓ ↓ ↓</div>			
	50,0	50,0	100,0	200,0

Apportioned relationships to other discrete work packages

- ◉ Work packages that have similar performance are considered as measurement base to other work packages.

Pacote	Jan	Fev	Mar	Total
Pacote de Ref	50,0	50,0	100,0	200,0
Pacote Analis	75,0	75,0	150,0	300,0

Conclusions

Most used methods: percent complete estimates and equivalent completed units

- Percent complete estimates is popular due to being easy to use, despite its subjectivity
- Equivalent completed units is widely used in projects that have repeating activities that can be accounted using unit costs.

One method that is gaining momentum uses a fixed formula for each CAP. That's because it is more precise than percent complete estimates and also because it delimits two distinct execution points, i.e., its start and its end.

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