

# Metrike

# Faktori za izbor metrika

- Način razvoja (development approach)
  - Tradicionalni, adaptivni
- Proces model
  - Linearni, iterativni, Time-boxed, Countinuous
- Način isporuke (delivery mode)
  - Diskretni projekat, kontinualni razvoj i podrška

# 1. Percentage of scope completed

- Opseg je fiksiran unaprijed
  - Da bi iskazali progres u smislu procenta učinjenog moramo znati šta je 100% učinjeno
  - Isporuka je poseban projekat
- Adaptivni pristup
  - Procenat production-ready funkcionalnosti
- Tradicionalni pristup
  - Rano otkrivanje rizika isporuke kroz praćenje ispunjenja ciljeva u fazama razvoja
  -

## ***Metric: Percentage of scope complete***

### ***Question(s) answered***

- Are we on track to complete the planned scope on schedule?
- Description
- The amount of planned work that has been completed as of the reporting date
- Value
- Early warning of potential delivery risk

### ***Dependencies***

- Approach: traditional, adaptive (with fixed scope)
- Process model: any
- Delivery mode: discrete project

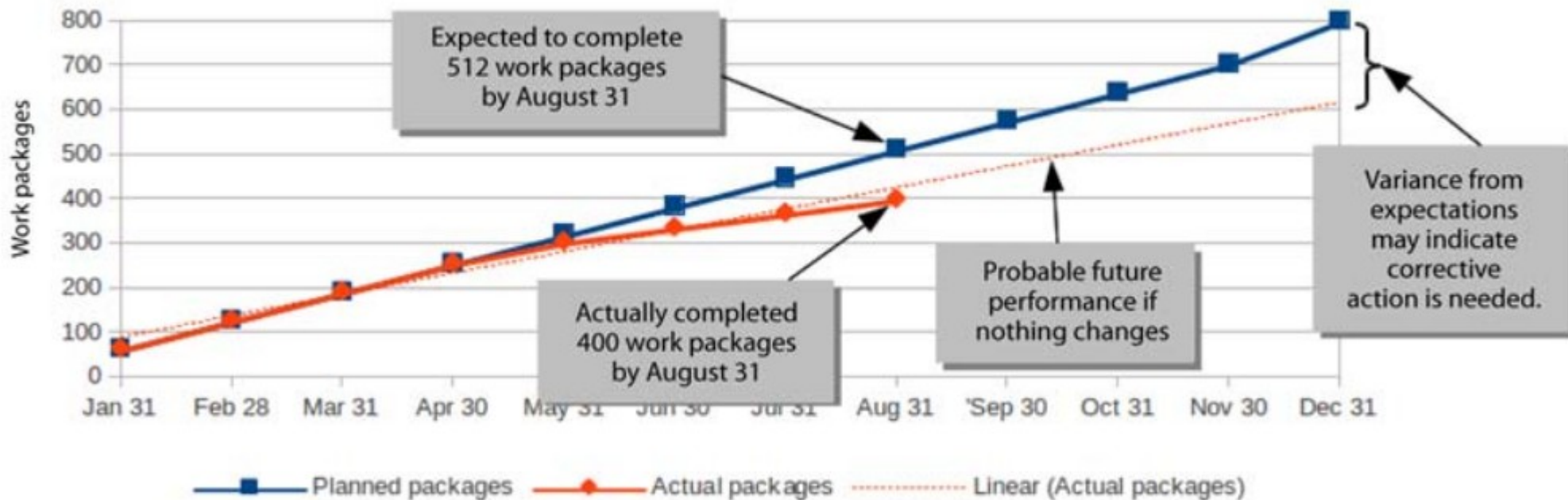
### ***Success factors***

- The initial definition of 100% of scope is firm and complete.
- The budget and/or schedule may be flexible.

# Tradicionalni pristup

Number of Work Packages Complete by Date

Traditional Software Delivery Initiative



# Moguće akcije

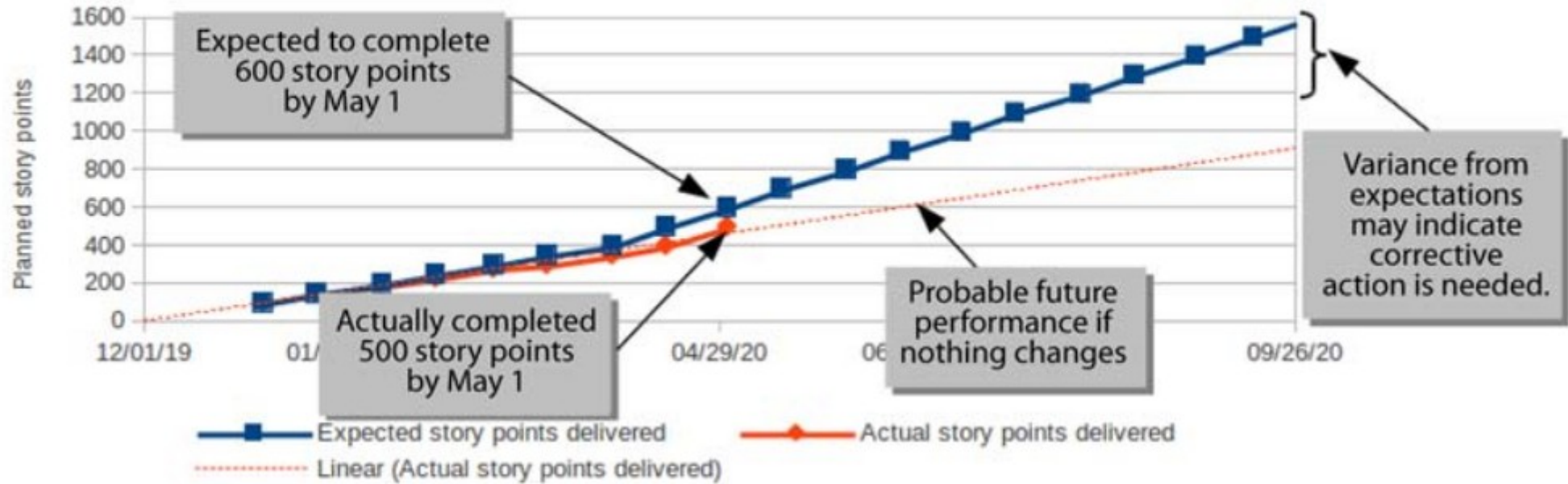
- Promjena načina organizacije tima
- Angažovanje novih resursa
- Prekovremeni rad
- Promjena plana (opsega, budžeta, vremenskog okvira)
- Otkaz projekta

# Adaptivni pristup

- Fiksiran je scope, fleksibilni mogu da budu budžet i/ili vremenski okvir
- Inkrementalno se isporučuju “mali” podskupovi rješenja
- Lightweight upravljanje, ne postoji WBS (work breakdown structure), već je definišu product backlog i story points (relative sizing)

# Scope Completed to Date

Based on Planned Story Points





## 2. Earned Value

- Moraju biti fiksirani opseg, vremenski okvir i budžet
- Uobičajeno se koristi za velike projekte
- Work breakdown strukture
  - Work packages, poznati su procinjeni sati i budžet

## ***Metric: Earned value***

### ***Question(s) answered***

- Are we on track to complete the planned scope on schedule and within the allocated budget?

### ***Description***

- The amount of budgeted cost that has been used up as of the reporting date
- Value
- Early warning of potential cost and/or schedule variance

### ***Dependencies***

- Approach: traditional
- Process model: any
- Delivery mode: discrete project

### ***Success factors***

- The initial definition of 100% of scope, schedule, and budget are firm and complete.

# Primjer

Budgeted cost of work package "Calculate Sales Tax"		
Business Analyst hourly rate		\$50
Programmer hourly rate		\$75
Software Tester hourly rate		\$60
Estimated hours for analysis	4	
Estimated hours for programming	10	
Estimated hours for testing	4	
Cost of analysis	$\$50 \times 4 \text{ hours} =$	\$200
Cost of programming	$\$75 \times 10 \text{ hours} =$	\$750
Cost of testing	$\$60 \times 4 \text{ hours} =$	\$240
Budgeted cost		\$1,190

# Formule

- Planned value PV – proizvod procjene radnih sati i cijene sata
- Earned value EV – proizvod procenta urađenog posla i ukupne cijene projekta
- Actual cost AC – stvarni trošak
- Cost variance  $CV = EV - AC$
- Schedule variance  $SV = EV - PV$

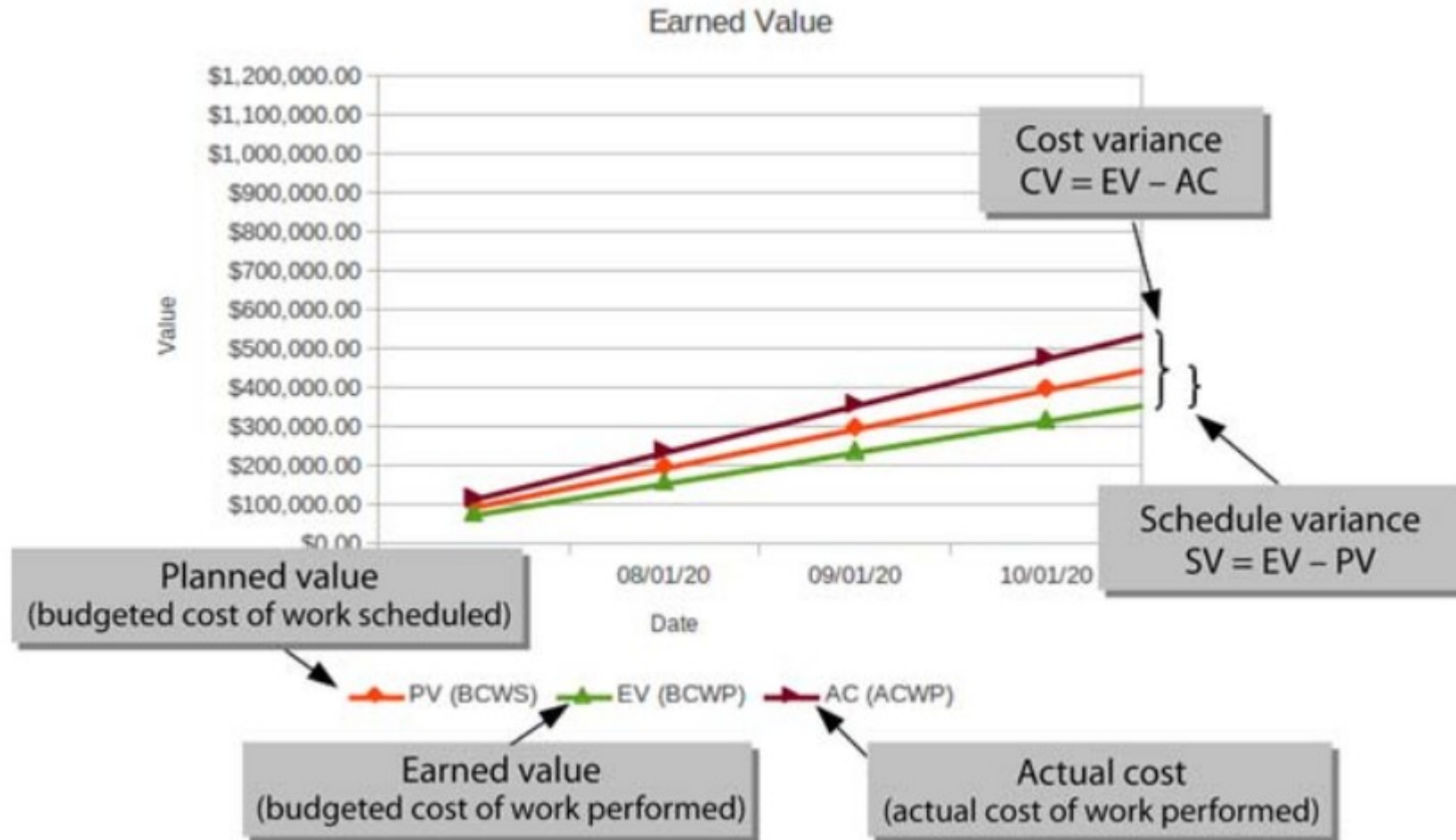
# Tabelarni prikaz

Negative CV means the project is trending over budget.

Date	Planned % Complete	PV (BCWS)	Actual % Complete	EV (BCWP)	AC (ACWP)	CV = EV - AC	SV = EV - PV
07/01/20	10%	\$100,000.00	8%	\$80,000.00	\$120,000.00	-\$40,000.00	-\$20,000.00
08/01/20	20%	\$200,000.00	16%	\$160,000.00	\$240,000.00	-\$80,000.00	-\$40,000.00
09/01/20	30%	\$300,000.00	24%	\$240,000.00	\$360,000.00	-\$120,000.00	-\$60,000.00
10/01/20	40%	\$400,000.00	32%	\$320,000.00	\$480,000.00	-\$160,000.00	-\$80,000.00
11/01/20	50%	\$500,000.00	40%	\$400,000.00	\$600,000.00	-\$200,000.00	-\$100,000.00
12/01/20	60%	\$600,000.00					
01/01/21	70%	\$700,000.00					
02/01/21	80%	\$800,000.00					
03/01/21	90%	\$900,000.00					
04/01/21	100%	\$1,000,000.00					

Negative SV means the project is trending over schedule.

# Grafički prikaz



# 3. Budget burn

- Tradicionalni pristup – ukazuje na mogućnost da budžet bude probijen
- Adaptivni pristup – procjena da li će finansije biti dovoljne za ostvarivanje cilja na osnovu procjene članova tima o dinamici realizacije i isporuke proizvoda
- Inkrementalno finansiranje – prati dinamiku trošenja budžeta koja dalje utiče na proces donošenja odluka (nastavak projekta, povećati resurse, prekinuti finansiranje itd.)

## ***Metric: Budget burn***

### ***Question(s) answered***

- Do we have enough money to complete the planned work on schedule?

### ***Description***

- Predicted budget performance based on actual spending to date
- Value
- Warning of potential cost overrun

### ***Dependencies***

- Approach: any
- Process model: any
- Delivery mode: discrete project

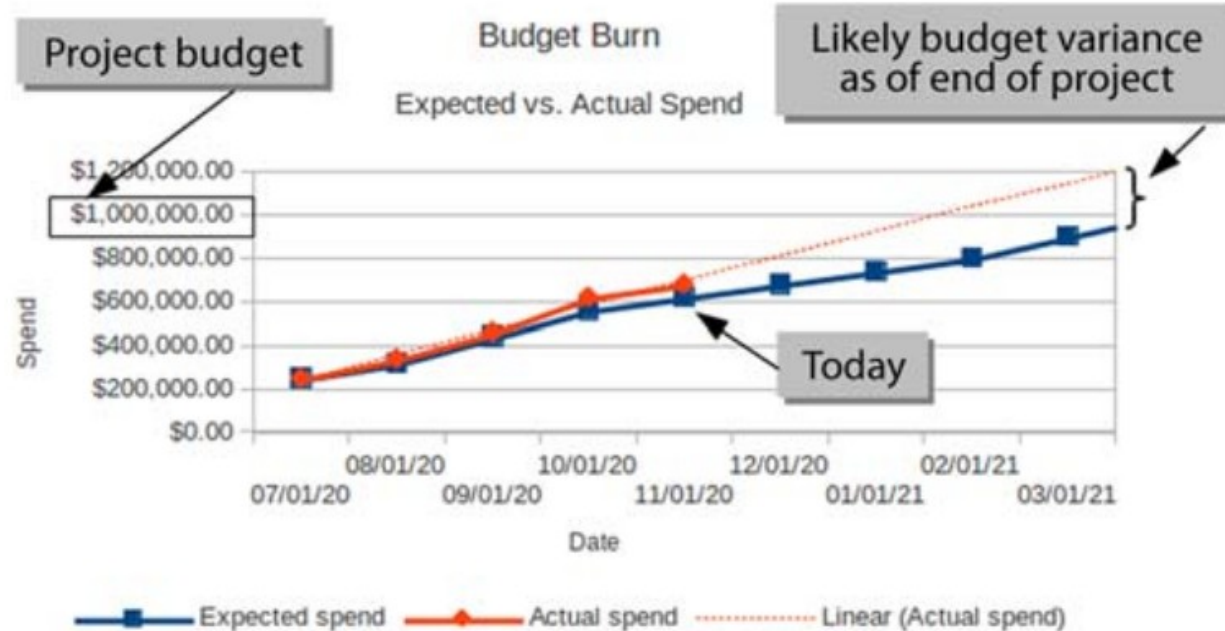
### ***Success factors***

- The total budget for the project or for a distinct phase or release is allocated in advance—that is, any sort of funding model other than a recurring expense budget.



# Tradicionalni pristup

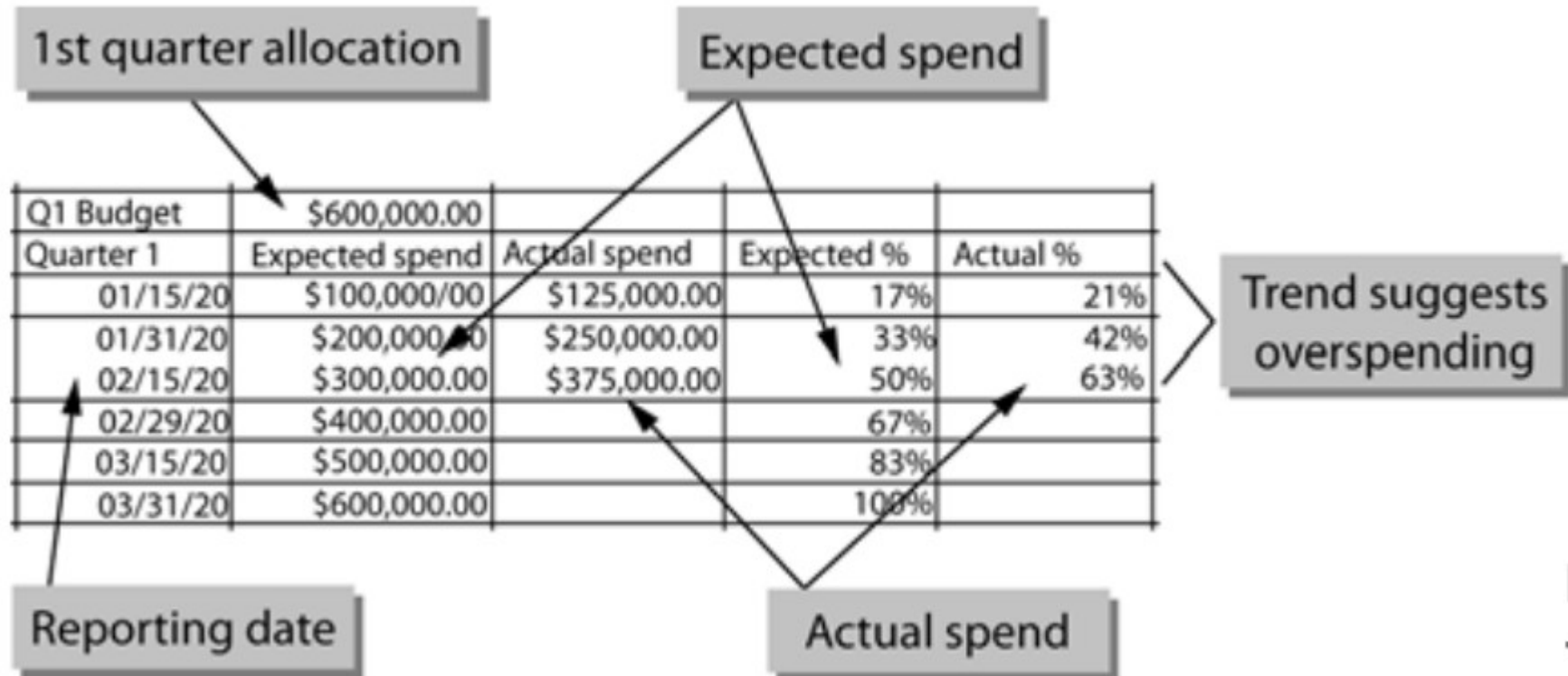
- Will we run out of money before we run out of time?



# Adaptivni pristup

- Finansiranje beyond budgeting – periodična procjena ciljeva, rizika i prioriteta i definisanje budžeta
  - Praćenje troškova za svaki period u kome se alociraju sredstva

# Adaptivni pristup 2



# 4. Buffer burn rate

- Planning buffer – prostor za moguće kašnjenje, testiranje, proširenje opsega itd.
  - Obično se odnosi se na vremenski okvir ili budžet
  - Za tradicionalne projekte do 50%, za adaptivne projekte do 100%
  - “Probijanje” bafera može da znači da projekat troši više finansija ili vremena

## ***Metric: Buffer burn rate***

### ***Question(s) answered***

- Will we exceed our planning buffer before we run out of time?

### ***Description***

- Monitor the burn rate of the planning buffer.
- Look for trends that indicate emerging delivery risks.

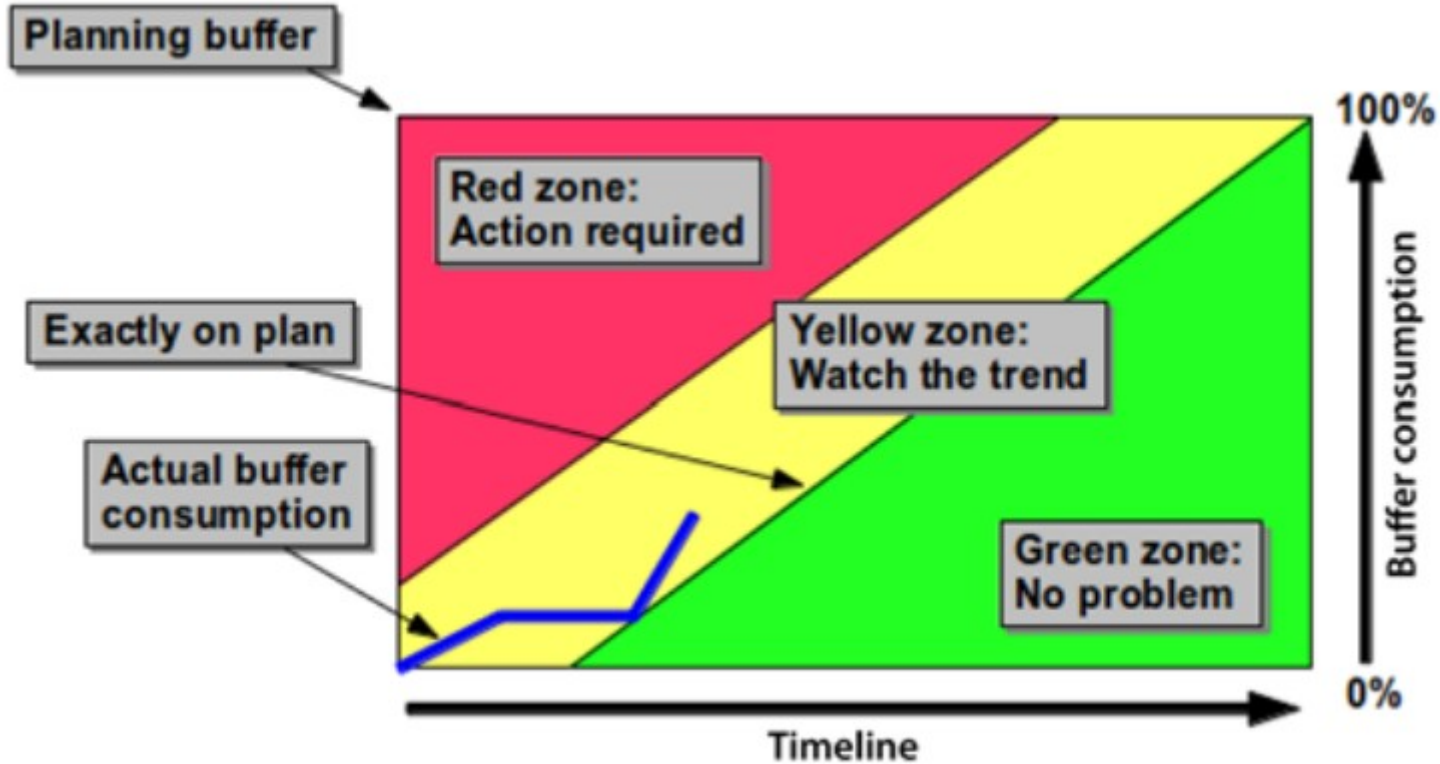
### ***Value***

- Early warning of potential delivery risks
- Dependencies
- Approach: any
- Process model: any
- Delivery mode: discrete project

### ***Success factors***

- No special success factors

# Fever chart



# 5. Running tested features

- Incremental delivery, adaptivni pristup
  - tim definiše opseg sa klijentima i isporučuje production-ready djelove traženog rješenja sve dok se ne dostigne dovoljna biznis vrijednost
  - RTF je broj funkcionalnosti koje su prošle automatske testove i instalirane su na test okruženje

# ***Metric: Running tested features***

## ***Question(s) answered***

- How many of the planned features of the solution are in a production-ready state?
- Are we creating regressions (breaking previously working code) as we deploy new features?
- Are we likely to complete sufficient functionality on schedule to provide enough business value to justify continuing the project?
- How much time will we need to complete a given set of features for the new solution?

## ***Description***

- A simple count of the software features that have been or could be deployed to production. It's a forward-facing metric.

## ***Value***

- Provides a mechanism to track progress toward the project goal when there's no firm definition of 100% of scope

## ***Dependencies***

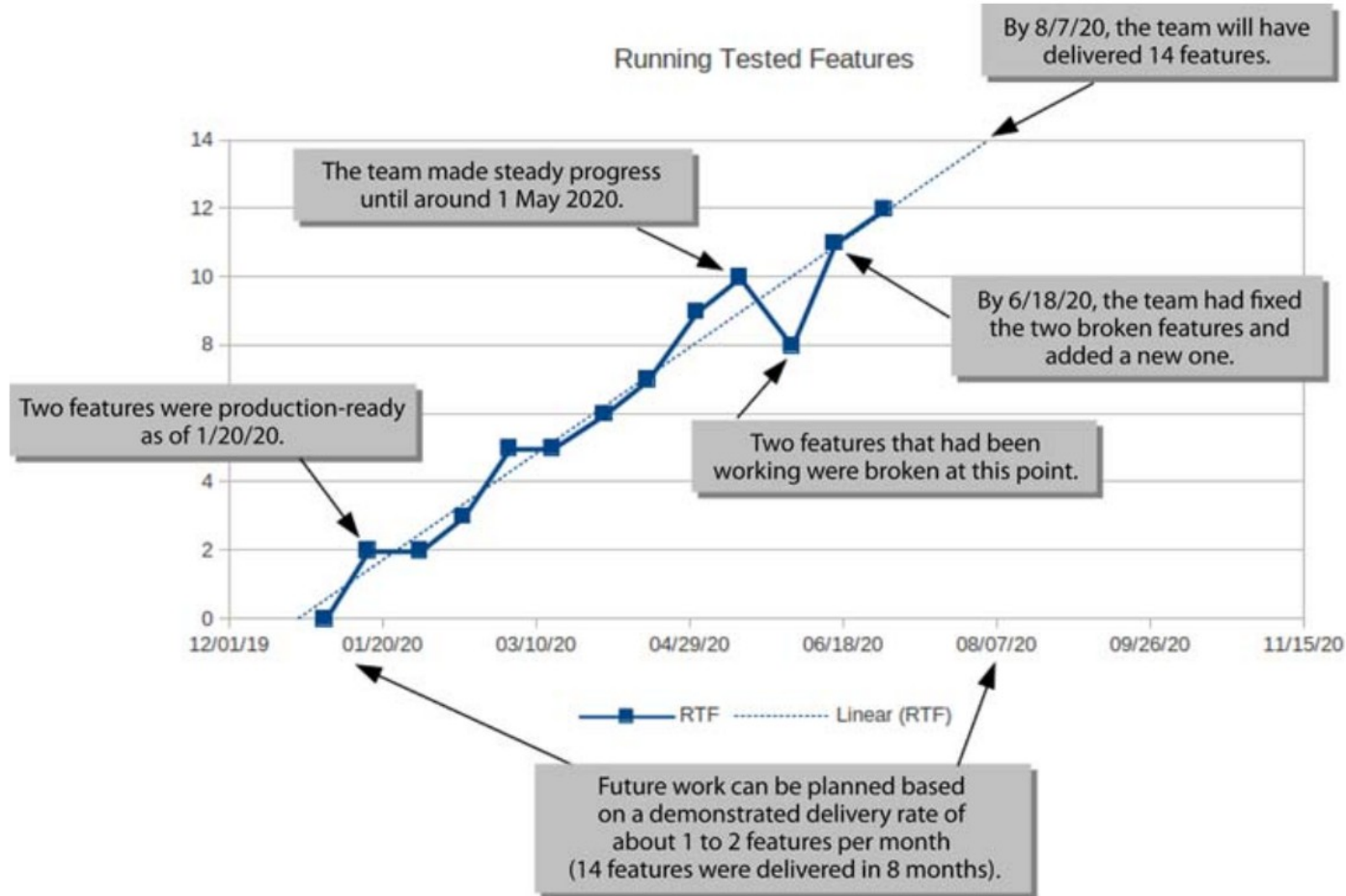
- Approach: adaptive
- Process model: iterative, time-boxed, or continuous flow
- Delivery mode: discrete project

## ***Success factors***

- Throughout development, the team delivers subsets of the solution incrementally to a target environment where the features are exercised regularly using automated tests.
- The team uses automated test cases at multiple levels of abstraction to ensure that the features complete to date are functioning properly and that updates to the code base haven't broken previously working features.



# Primjer



# 6. Earned business value

- Adaptivni pristup
  - *What people can do is specify the business capabilities that the new software must support.*
- Što prije isporučiti highest-value funkcionalnosti
  - Business-value poeni za svaku funkcionalnost

## ***Metric: Earned business value***

### ***Question(s) answered***

- What proportion of the anticipated business value has been delivered to date?
- Have we achieved the goals of the project well enough to declare victory and move on?
- Is it worth the cost to continue developing the remaining features?
- Are we focusing on the highest-value features of the solution?

### ***Description***

- Tracks the relative amount of planned business value that has been delivered to date

### ***Value***

- Provides a mechanism to monitor business value delivery when there's no comprehensive up-front plan

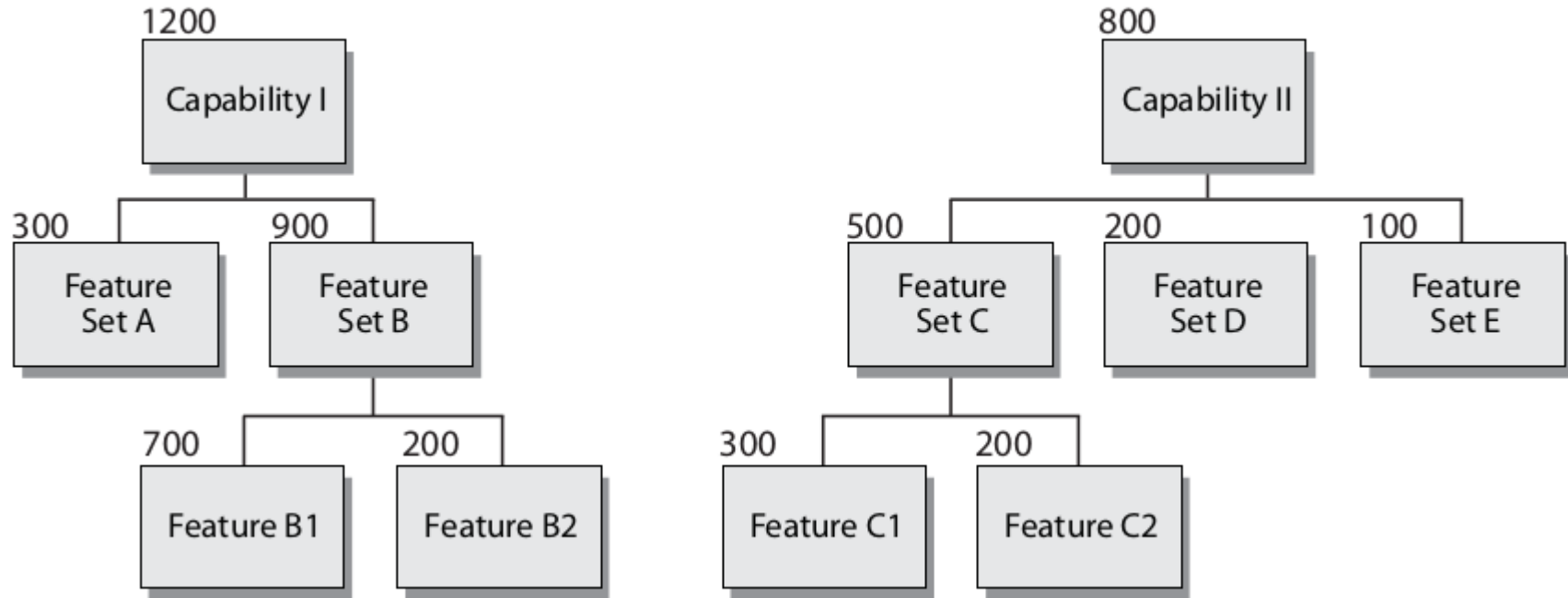
### ***Dependencies***

- Approach: adaptive
- Process model: iterative, time-boxed, or continuous flow
- Delivery mode: discrete project

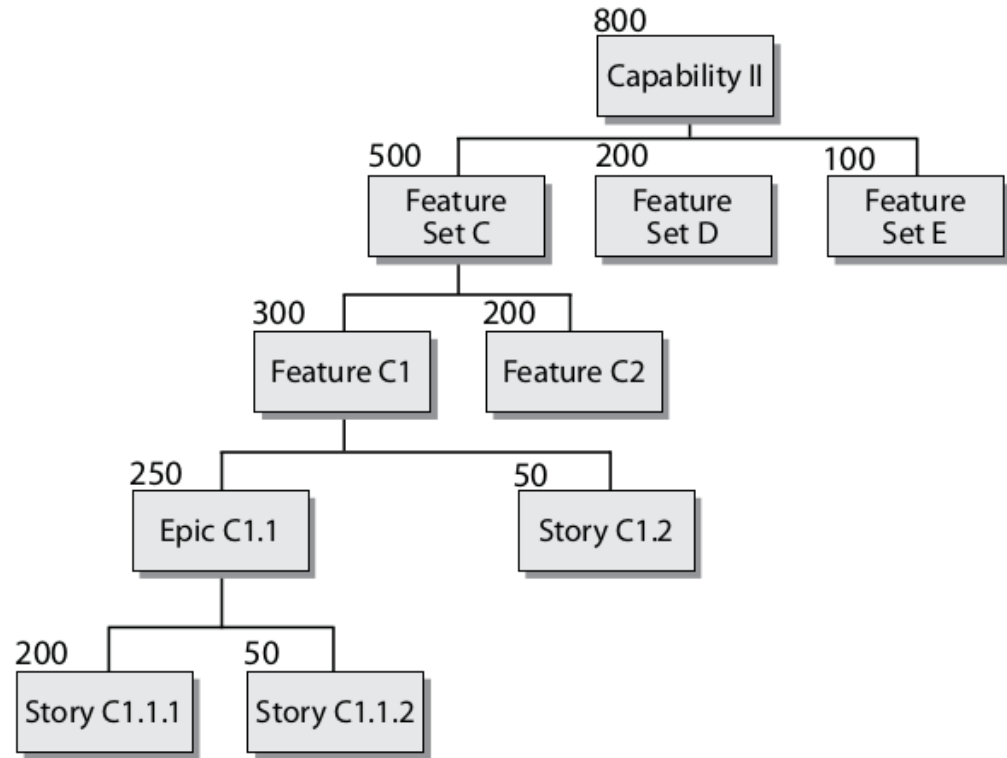
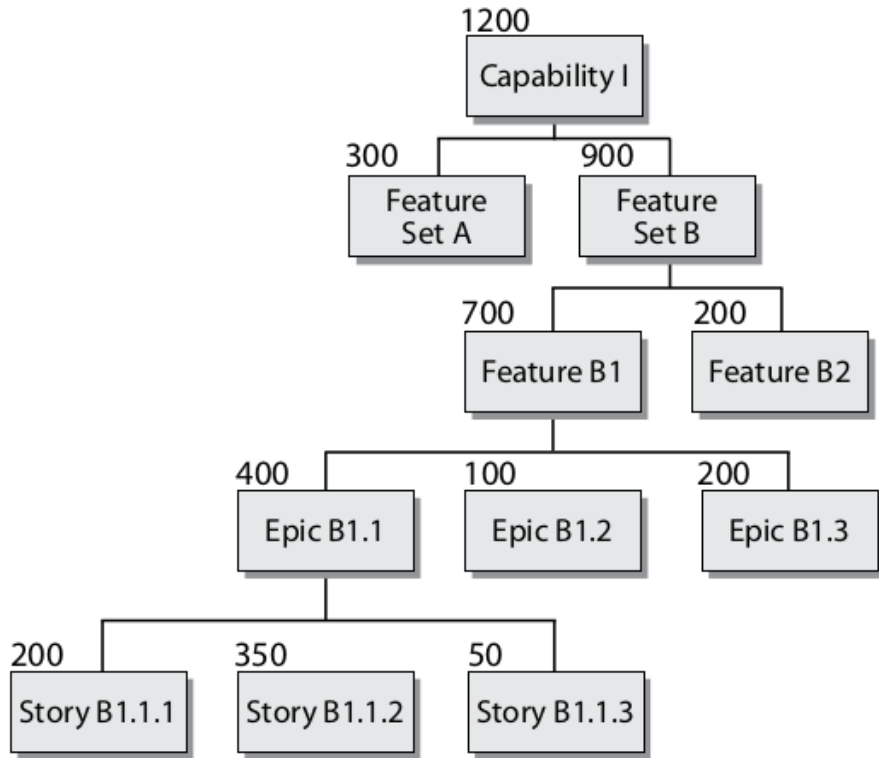
### ***Success factors***

- Active involvement of key stakeholder(s) with continue/terminate decision-making authority
- The relative anticipated business value of each feature is assigned by key stakeholder(s) when the feature is defined.

# Primjer



- Redosljed isporuke
  1. Capability 1, Feature Set B, Feature B1
  2. Capability 2, Feature Set C, Feature C1
  3. Capability 1, Feature Set A
- Features se sastoje od
  - Epics
  - Stories



Team gets credit for 350 value points when Feature B1.1.2 is complete.

Date	Cumulative Value To Date	Feature	Value	Story	Value	Story	Value	Story	Value	Story	Value
01/01/20	0										
01/15/20	350	B1.1.2	350								
02/01/20	550	B1.1.1	200								
02/15/20	600	B1.1.3	50								
03/01/20	850	C1.1.1	200	C1.1.2	50						
03/15/20	1070	B1.3.1	100	B1.3.2	60	B1.3.3	50				
04/01/20	1210	C2.1	40	C2.2	100						
04/15/20	1510	C1.2	20	B1.2.1 (basic)	50	B2.1	125	B2.2	75	B1.2.2	30
05/01/20	1675	A1.1	5	A1.2	100	A2.1	40	A2.2	20	B1.2.1 (enhanced)	20

With completion of Feature B1, team has delivered 600 value points.

Figure 2.22. Sample Data for EPV

## Earned Business Value

The line climbs as the team delivers business value points.

