

COQUALMO and Defect Prevention

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Outline

- Brainstorming session
- Identifying issues/research topics
- Prioritizing research topics

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Brainstorming

A. COQUALMO + ODC

A1. Legacy classification

Translating to ODC causes ramp-up delays=>Automate

A2. Definition and standard of 'defect'

B. PSP

Drive defects out before testing; Difficult to maintain PSP data

C. Peer reviews

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Brainstorming

D. Defect prevention

Why wait to remove when we can prevent?

JAD sessions; IDEF modeling

Sponsor+User interactions at Reqs gathering

Paradigm shift to move left

Get QA involved early (maybe even at Reqs. Gathering?)

D1. Basili's data

80:20 rule : Characteristics/differentiators

Basili/Selby's data did some of this?

CoQUALMO + Risk Mgmt (Madachy) +

Basili/Selby work – sensitivity analysis

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Brainstorming

E. Add more drivers that impact composite “Quality Cost Driver

- looping back to COCOMO II definitely
- how about feeding back to CORADMO and COPSEMO?

F. COCOMO Integratable (Harmonized) Unified SUITE – decoupled

G. Microsoft has BUGS but has CONTROL 5

Brainstorming

H. DI/P/R Tree

- Effectiveness (% removed) v/s efficiency (time, effort)
- Which activities remove which defects
- Cost v/s activity for DP/R
- Rework

I. Late-stage

- Problem is getting early stage data

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Brainstorming

J. Validate Architecture – centric development has better quality?

What is the distribution of defects?

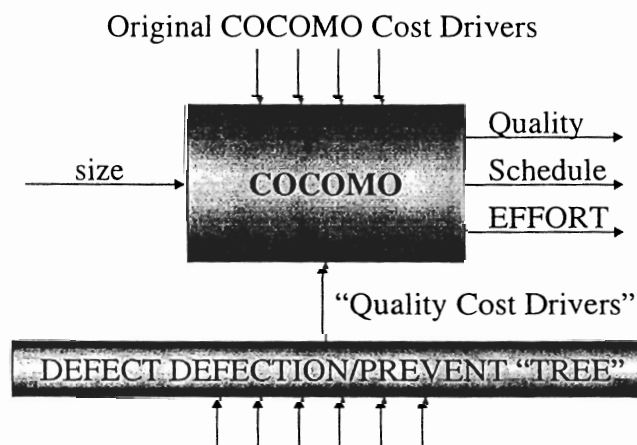
Can we have a parametric model?

K. Is CoQUALMO – RAD different from CoQUALMO-COCOMO

Is it life cycle dependent?

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Brainstorming



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Brainstorming

COQUALMO OUTPUT

DISCOVERED DEFECT TYPE	LCO	LCA	CDR	IOC
Algorithms (Req.)				
Interface (Design)				
Data Initialize (Coding)				
ODC Classification Type				

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Identifying Issues/Research Topics

1. Defect Classification (A)
2. Defect Introduction/Prevention/Removal Tree (H)
3. Determine knobs (attributes) that relate to tree (E)
4. Data Collection
5. Parametric Modeling; Distribution of defects => COQUALMO+Risk Mgmt (Madachy)+Basili/Selby data analysis+sensitivity analysis (D)
6. Integratable (harmonized) Unified COCOMO Suite (F, K)

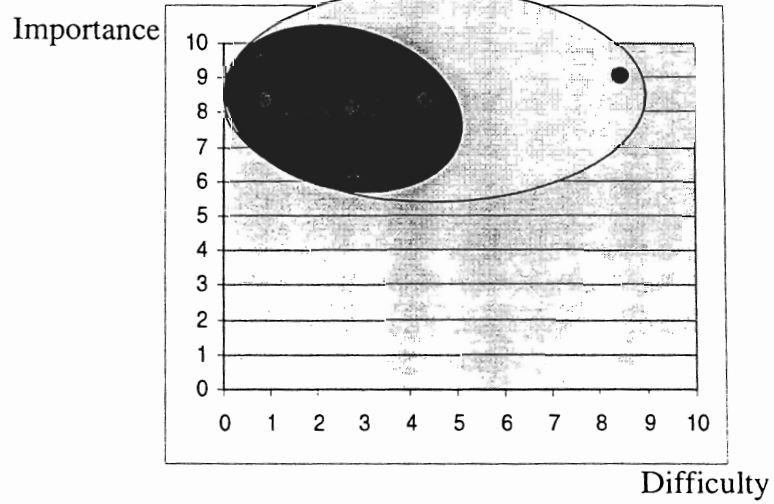
COQUALMO-COCOMO different from COQUALMO-CORADMO?

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Prioritizing Research Topics

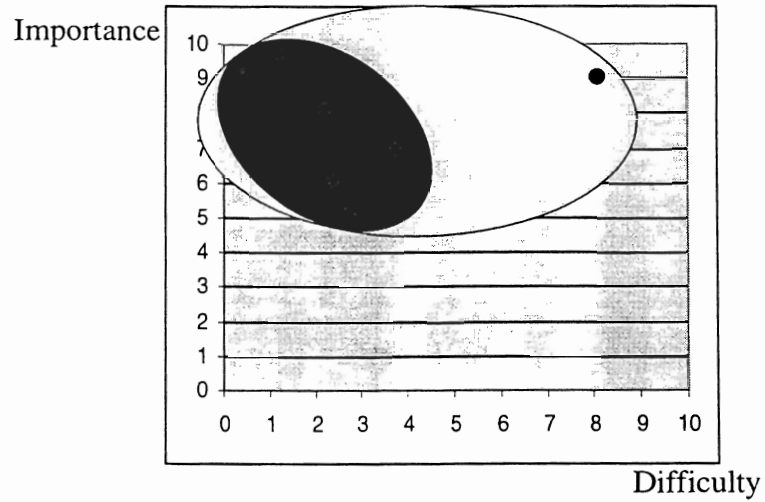
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1. Defect Classification



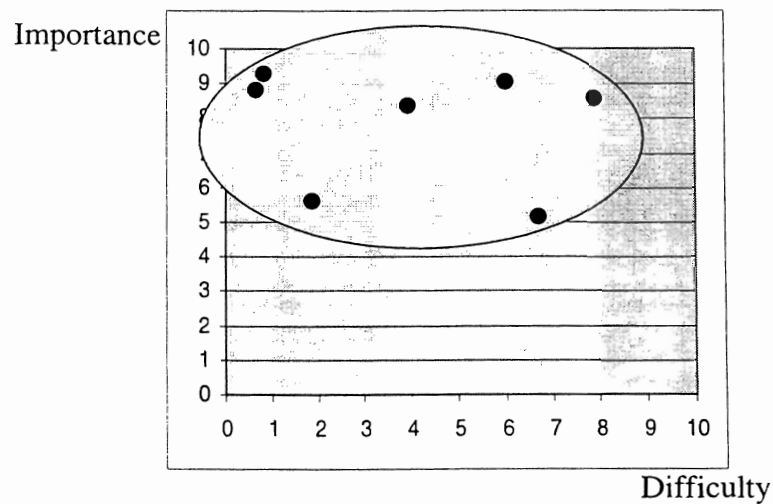
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2. Defect Introduction/Prevention/Removal Tree



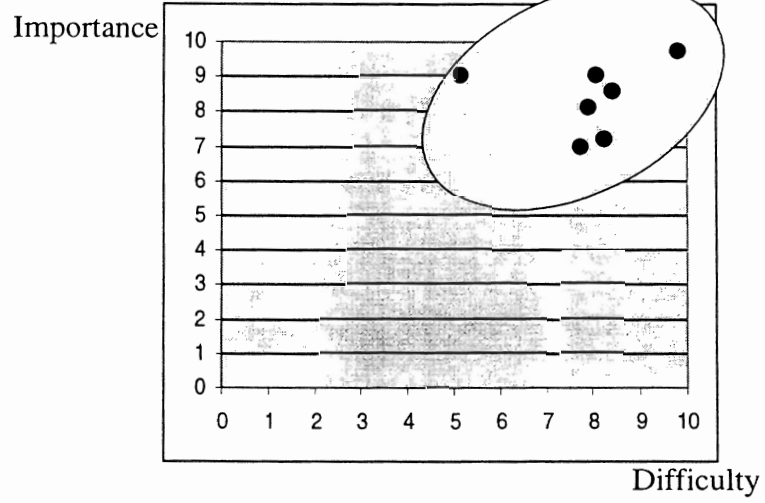
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3. Determine knobs (attributes) that relate to tree



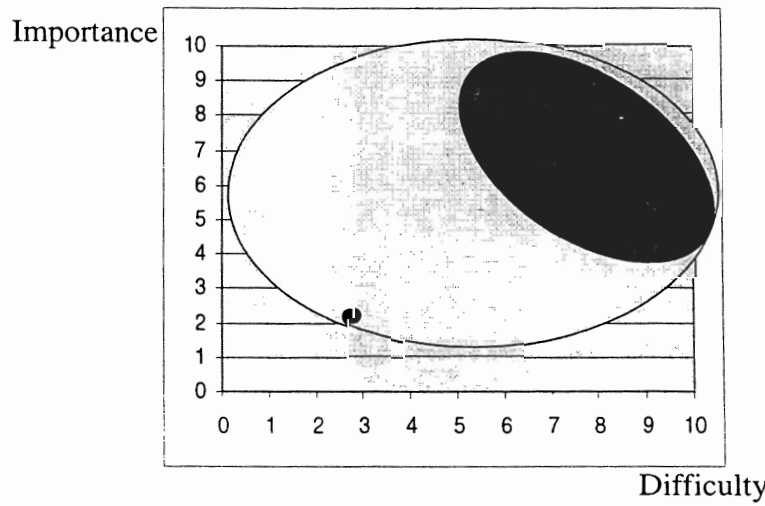
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4. Data Collection



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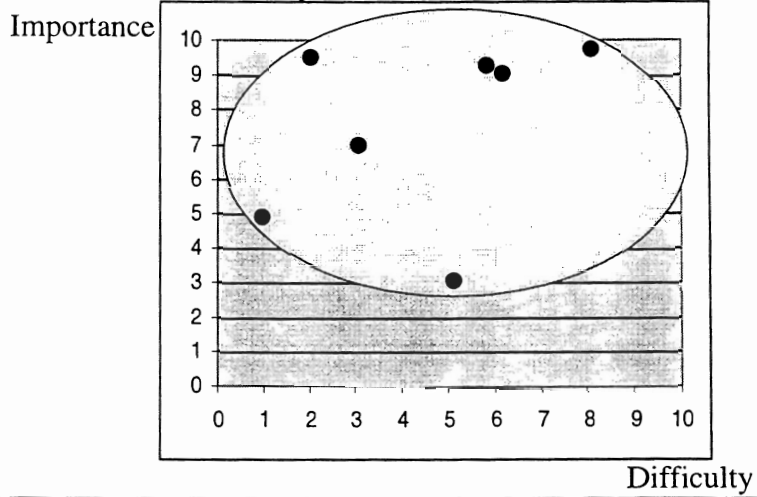
5. Parametric Modeling; Distribution of defects => COQUALMO+Risk Mgmt (Madachy)+Basili/ Selby data analysis+sensitivity analysis



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6. Integratable (harmonized) Unified COCOMO Suite (F, K)

COQUALMO-COCOMO different from
COQUALMO-CORADMO?



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