

Business Analytics : a Practitioner's Perspective

*Presented by
Dr.P.Balasubramanian,
C.E.O.,Theme Work Analytics*

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balasubp@gmail.com

Business Analytics : a Practitioner's Perspective

Success Stories :

American Airlines : Yield Management

General Electric : Bundled Services

Swiss Re : Reinsurance Stacks

Dell : Direct Sales : Mass Customization

Walmart : Real time Analytics :SCM

Amazon.com : Buyer Behaviour

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1. Start with reliable Data
2. It is usable Information when embedded in the right context
3. Trend Analysis : Value as a function of time
4. Pattern Recognition : Correlation
5. Causative Analysis : Time series Vs Regression Vs Models
6. Insight
7. Forecasting : Predictive Analytics
8. Decision Support

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Statistical Analysis

Time Series Modeling

Regression

System Dynamics

Optimization

Simulation

Data Base Technology

Expert Systems : AI

Data Warehousing

Data Mining

Pattern Recognition

Knowledge Management

Business Analytics encompasses all of these :It is part of Business Intelligence

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Challenges:

Data Paucity : Accuracy and Reliability

Data Abundance

Generation of Solution Alternatives

Decision Variables and Impact Evaluation : Modeling

Feasibility and Optimality

Efficient Search : Trade off

Uncertainty

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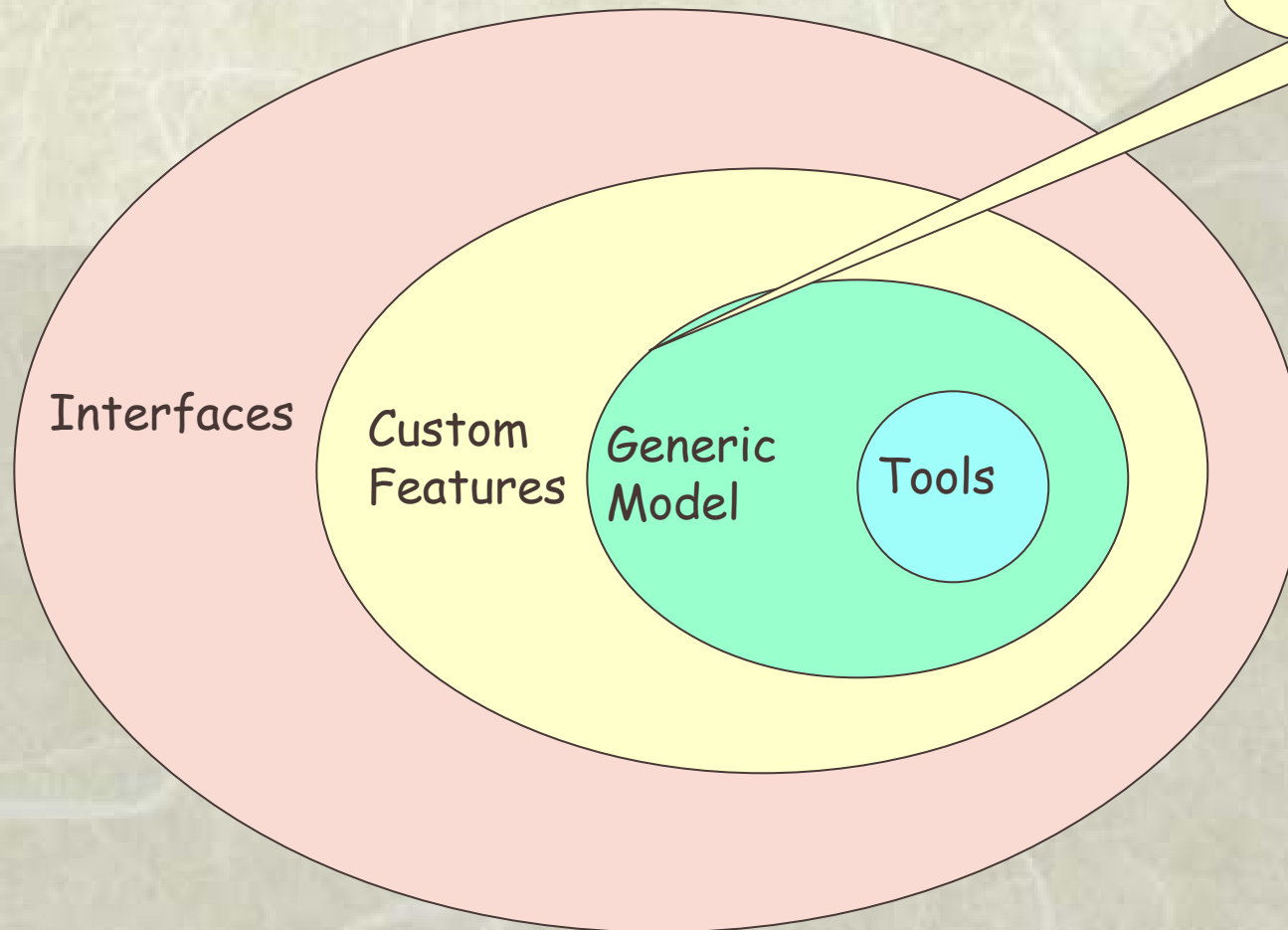
Role of Analytics in Design

1. Functionality
2. Manufacturability
3. Maintainability
4. Disposability
5. Information Recovery

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Implementation Challenges



Even this layer may need customization

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❖ Application Software Maintenance

The Maintenance need arises due to

- Bugs undiscovered in initial implementation
- Lax data verification procedures and subsystems
- Changed data conditions
- Changing business needs
- Changes in environment; legislation etc
- Bugs injected during the Maintenance process

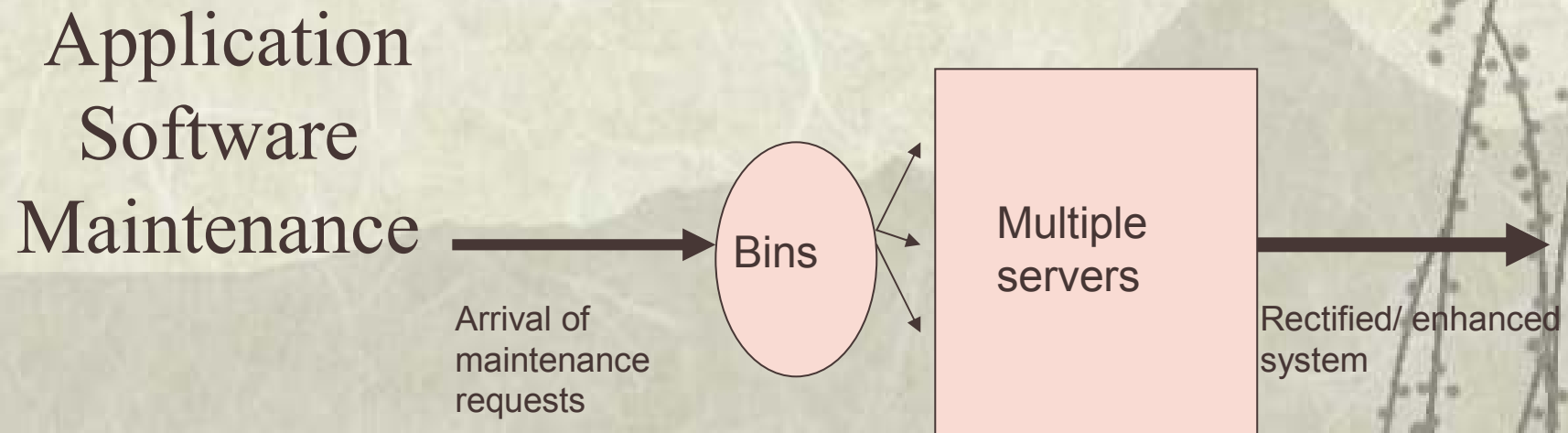
Application Software Maintenance

The Maintenance effort required is a function of

- Bugs density
- Total lines of code
- Frequency of use of the system etc
- Required service level

Hence a critical challenge facing firms is to manage the code integrity and the resources expended to maintain the system. This has to be done in the context of the task being mundane with low levels of worker motivation.

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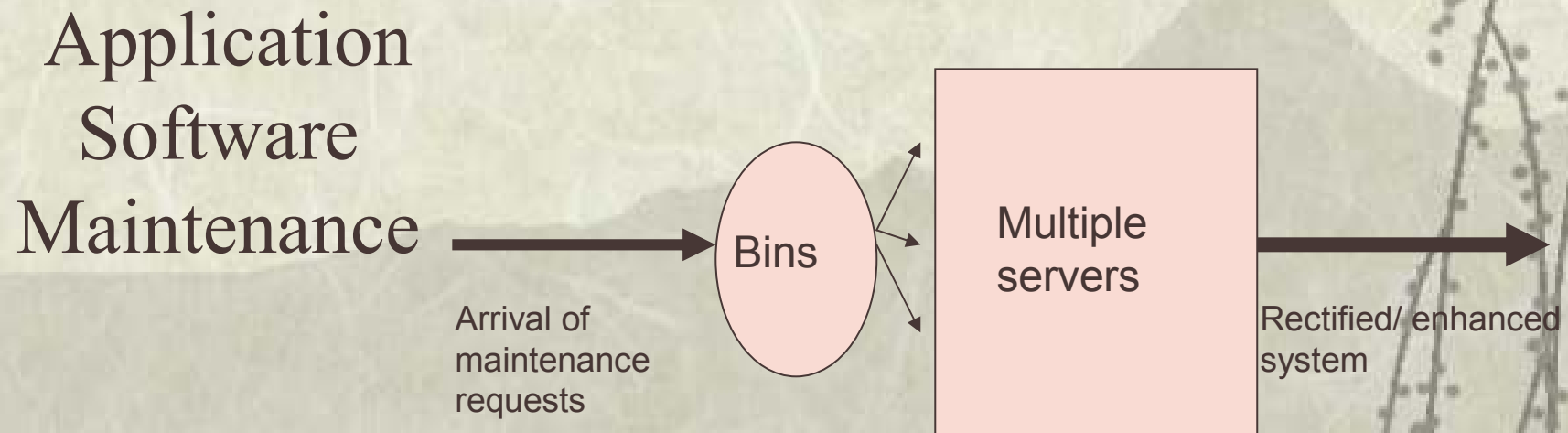
Servers tend to specialize in parts of the application.

Arrival rate at times can be excessive. Demand > capacity

Randomness of arrivals leads to queue build up

Item rectification priority changes dynamically.

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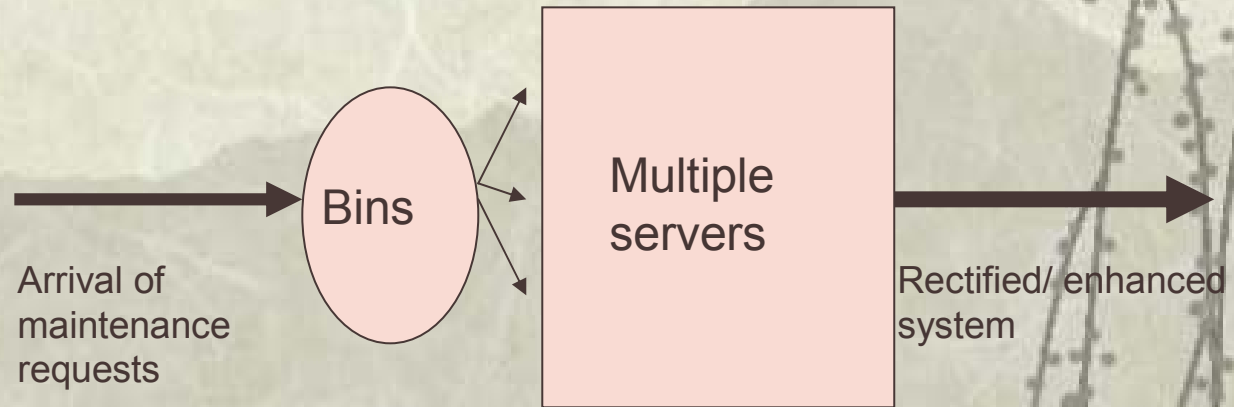


improve server productivity.

The productivity improvements should result in decrease in number of servers needed from time to time.

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Application Software Maintenance

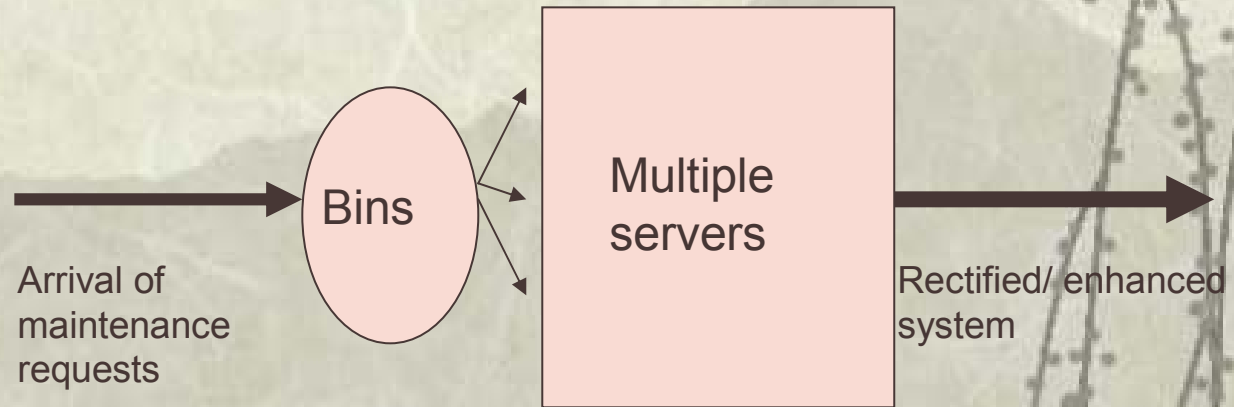


Server productivity can be improved by

- Building multiple skills in each server
- Bringing the documentation upto-date
- Creating a shared knowledge data base for system based learning
- Creating standard procedures for error analysis, impact analysis, rectification and testing

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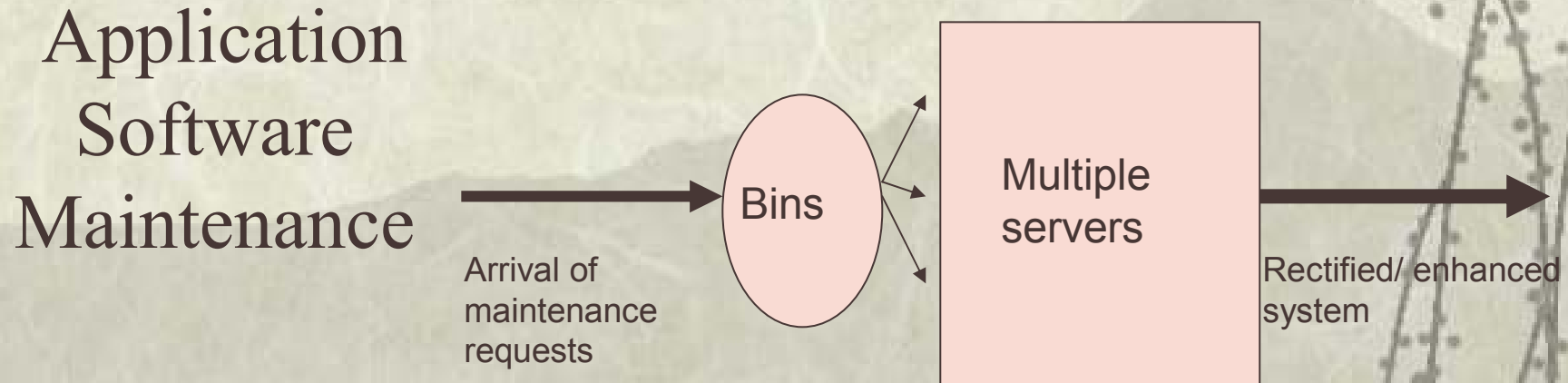
Application Software Maintenance



Server productivity can be improved by

- Use of domain experts as trainers and project resources
- Extensive use of metrics to measure and report productivity levels and service levels
- Restructuring the code periodically to improve its maintainability

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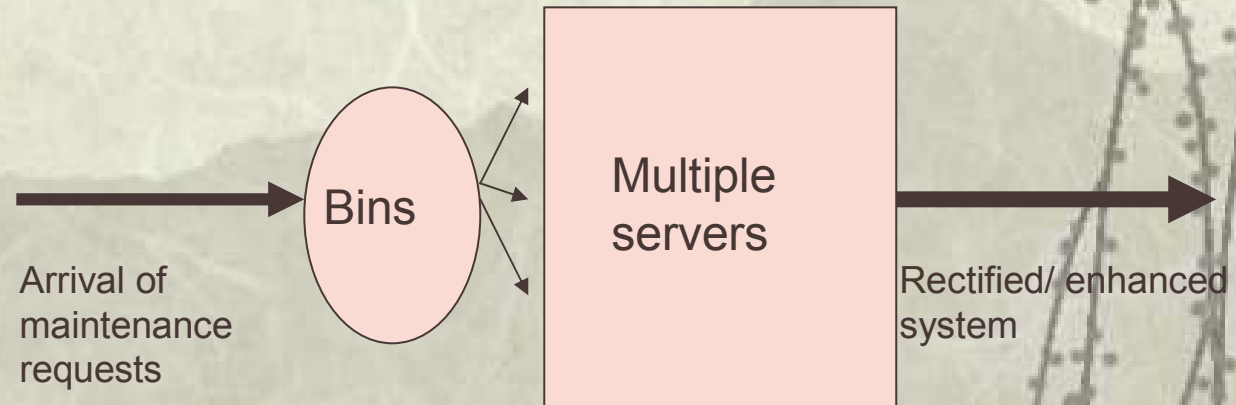


a dramatic solution would call for reducing the arrival rate continuously.

A causal analysis of the arrival rate was carried out of previously executed projects. It revealed that (a) slow surfacing of hidden bugs over a period of time and (b) bugs injected during the maintenance process were the prime causes.

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Application Software Maintenance



a radically different approach to testing the software.

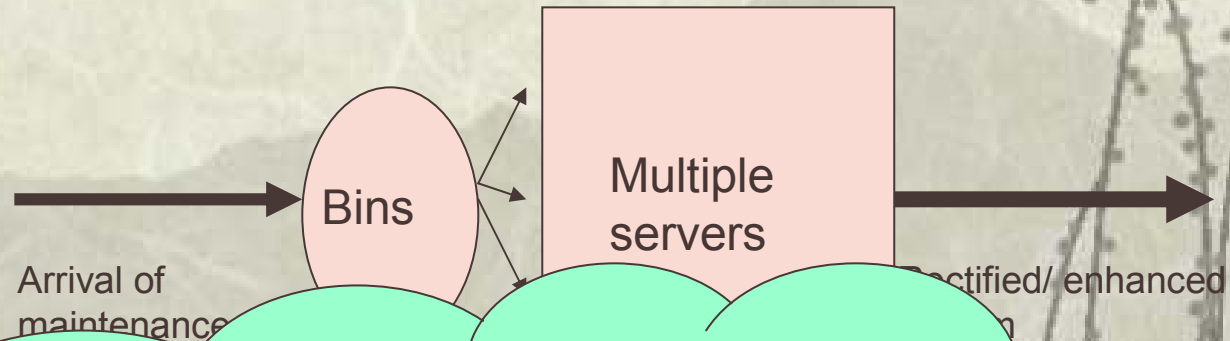
In future , we proposed

- Regression testing to ensure that no other part of the system was affected due to this change
- Comprehensive testing of the system in the first quarter (as though customer was contractually obligated to deliver an error free system to us)
- Tighter data edit and rectification phase

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Application Software Maintenance



a radical

In future

- Regret due to

- Comprehensive

- Tighter data edit and rectification phase

Resulted in dramatic reduction in Maintenance team size. In winning the implementation contract in a new ERP environment.

though customer was contractually bound to use system to us)

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Thanks and Best Wishes

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Dr.P.Balasubramanian
Founder and C.E.O.,
Theme Work Analytics,
Bangalore, India, 560 041
balasubp@gmail.com