



REUSE IN SOFTWARE ENGINEERING



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Como aumentar a produtividade da sua empresa?

Vinicius Cardoso Garcia

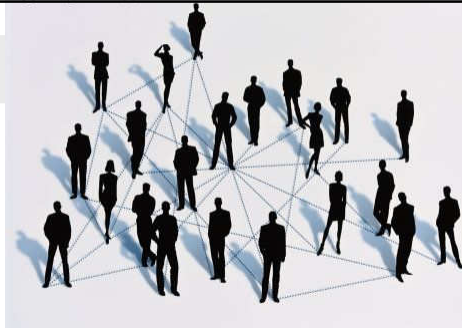
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IT Market Reality

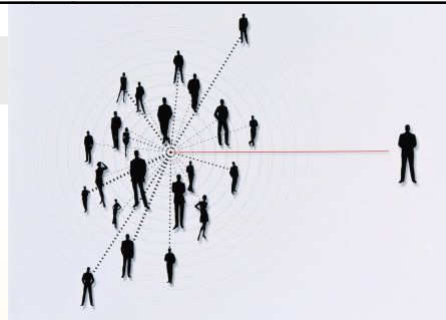
- Growing Market
- Lack of Good Professionals
- Need to improve productivity
- Need to reduce costs



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A better approach

- Optimize processes
- Use better tools
- (Re)Use what you have



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**We need to improve productivity with
the resources we already have**

Building without Reuse (Personalization)



Who: Nathan Sawaya (Artist)

What: Art pieces

How Long: Months to build one piece

How Much: Thousands of dollars a piece

Building with Reuse (Modularization)



Who: Lego (Manufacturer)

What: 5.000 pieces Starship with manual

How Long: Hours to build

How Much: US\$ 500

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Optimize the development process

Benefits of Software Reuse

- 1 - Improve Productivity
- 2 - Reduce Costs
- 3 - Improve Quality

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Who are we? What we do?



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RiSE Full Service Portfolio



CONSULTING



TRAINING

Tools



BART



CORE



LIFT



ToolDay

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Basic Asset Retrieval Tool



- Search Assets
 - Code
 - Documents
- IDE Integration
- Security
- Folksonomy
- Fast Results
- Up to Half a Million Assets
- Coming Soon
 - Integration with Asset Repository
 - Proactive Approach
 - Search Open Source Code
 - Java.net
 - Sourceforge
 - Eclipse

Component Repository

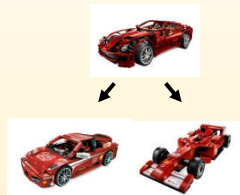


CORE



- Manage Asset
- Asset Certification
- Update Notification
- Security
- Bug Tracking
- Management Reports
- Asset Metrics
- IDE Integration (RAS Packager)
- New:
 - www.enterprise-components.com
 - Open Source Components

Tool for Domain Analysis



- Deal with Multiple Systems
- Plan for Reuse
- Reuse and Business/Strategic Guidelines
- Coming Soon:
 - Integration with Search Engine
 - Integration with Asset Repository

Legacy Information Retrieval Tool



LIFT

- Understand Legacy Systems
- Visual Representation of Complex Systems
- Extract Business Rules
- Document Legacy Systems
- Reports and Metrics
- Up to Half a Million Lines of Code
- Coming Soon:
 - Run/Debug code without validation
 - Integration with Search Engine

The team



RiSE Team (PhD and Masters) and
International Reuse Specialists from
US, Germany and Sweden



Intel Venture Capital
RiSE Business Plan – Top 10



RiSE Book Authors 16

Education and Culture

<http://cruise.rise.com.br>



<http://worldofreuse.blogspot.com/>



<http://riss.rise.com.br/>

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National Customers/Partners



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International Paterns



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Institut Experimentelles
Software Engineering



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MANNHEIM



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GEORGE
MASON
UNIVERSITY



POLITECNICO DI TORINO

Cases

- **Research**
 - Worked in the main software reuse research projects financed by the Brazilian government.
- **Education**
 - Petrobras: Corporate software reuse workshop with IT team from different states in Brazil
- **Consulting**
 - CENSIPAM: Software reuse consultancy in one of the biggest mission-critical systems in Brazil. CENSIPAM (Centro Gestor e Operacional do Sistema de Proteção da Amazônia)

Cases

- Reuse Adoption Program
 - CPM: Development of a Reuse Environment and process
 - AMIGOS: Social Network domain, increase the reuse capability towards a SPL approach
- Tools
 - Pitang: Software reuse tools introduction.
 - CESAR.EDU: Software reuse tools to aid in the MPES course lectures and projects
 - CESAR: Software reuse tools introduction and process adaptation
- Results
 - Up to 60% in software development improvement
 - Better understanding and implementation of software reuse process
 - Software development effort reduction

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Opportunities

- Education
 - Technical workshops to promote software reuse culture
- Software Reuse Consultancy
 - Identify software reuse opportunities according to organization needs and goals
 - Define **HOW** to measure (technical and economical) software reuse in the reuse program
- Software Tools
 - Implement and promote software tools to improve productivity

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Thank you

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