Process Modeling and Simulation is the quickest and most cost effective approach to achieve process optimization. In reality, several organizations across the globe have not been able to realize tangible benefits out of this approach due to several reasons. This paper aims at providing an insight to using process modeling and simulation in real life business processes and success stories of Wipro BPO in deployment of Process Simulation.

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Introduction

In every organization there exists a well defined Business Process Management System (BPMS). But ironically, the BPMS of most organizations start and end with process documentation. Minimal emphasis is placed on Process Optimization which is the most critical part in maintaining the bottom line figures. Process Modeling and Simulation is an effective way of ensuring that Process Optimization is quick & effective and yields desired results in the most cost effective manner. Wipro has successfully adopted this methodology in its BPMS and this document elaborates the mechanism adopted by Wipro to put its process optimization journey on the fast track.

Process Modeling and Simulation was adopted by Wipro in early 2009. Starting with internal experimentations in test scenarios, we have today progressed to a stage where Process Simulation has been deployed in different business verticals and horizontals with varied objectives.

The Basics of Process Modeling and Simulation

Several tools and simulation software are available in the market today. Each of them is an off the shelf product and it is for the organization to decide on what suits its needs best. Often, the decision making team is carried away with the features and capabilities of the tool without actually understanding the need of delivery teams who really use the tool. Apart from the features and integration capabilities (with existing process modelling tools like Visio) one needs to also look at ease of use and suitability for its business scenarios before short listing the simulation tool.

Key points that one must consider before a tool is selected are:

- Ease of deployment in current business scenarios.
- Shared models: Delivery teams should be able to run the models built by the modeling team and also make some changes by themselves if required.
- Learning curve period: The tool needs to support the existing process mapping platform thereby keeping the learning curve of the team as short as possible.
- Functionalities, features and capability of the tool
- After sales support: Technical support post purchase of the tool.

Once the team has shortlisted the tools that suit their needs, below magic quadrant (Source: Gartner) can be adopted to clinch the deal.
Issues & Challenges

Before considering a simulation exercise one should explore the need for simulation in detail. This helps in understanding and harnessing the power and benefits that are associated with this technology.

Imagine a virtual world in which you can visualize your processes in an accelerated environment and predict its long term performance. Such experimentations when done in real world consume unnecessary time and expenses that invariably lead to compromises. Moreover the dependency on manual calculations increases substantially impacting the performance predictability factor of the process.

Although manual calculations provide an insight to the process performance, often, real life scenarios are complicated and have several constraints. This makes it almost impossible to perform a manual calculation and predict the exact performance. On the other hand, there are unlimited constraints and scenarios that can be built into a virtual environment. Moreover an activity that takes several days using the manual route, in fact can be completed in a matter of minutes using a virtual scenario.
Failure Areas

In a modeling exercise, key failure areas can be classified into two categories such as Process Related & Model Related failures.

Simulation Methodology

Typical steps in developing a simulation model are listed below.
Step 1: Problem Definition – The first step to simulation is to define the objective by identifying critical problem areas in a process. Once the problem areas are identified it facilitates data collection and analysis for mapping the process steps in detail.

Step 2: Design the study - Once the objective of simulation is clear, the next step is to design the study. This includes data collection, finalizing the model and the duration of the simulation exercise.

Step 3: Design the conceptual model – During this stage, the first level of process mapping is done to understand the dependencies that exist in the process and to validate the data collected.

Step 4: Formulate inputs, assumptions and process definition – In this phase, the simulation team feeds the data collected into the model to generate the simulation. A critical step here is to consider the assumptions made while simulating the process. This step determines the predictability and accuracy of the simulation model.

Step 5: Build, Verify and validate the simulation model – The output of the simulation model is used to validate the model accuracy. The simulation model should be able to replicate the real world scenario of the process as closely as possible. The final acceptance of modeling accuracy depends on the assumptions made and the objective of the simulation.

Step 6: Conduct the Design of Experiments (DOE) - Once the model is finalized it can then be leveraged by conducting various “What-If” analyses. This needs to be done in a structured DoE (Design of Experiment) way to ensure that all “To-Be” scenarios are simulated and the most appropriate model is selected. It is important to note that the final “To-Be” model may not replicate the most optimized scenario. This is due to the fact that some process constraints cannot be excluded in real time.

Step 7: Document and present the model - Documentation is another critical step which ensures that the team is able to leverage the learning from the model in the long run.

Step 8: Define the model life cycle - Every model is true only within the process boundaries defined in the first 3 steps. It is important to clearly define the boundaries of the process and when the boundaries change, the model should be re-developed.

Case Studies

Case Study 1: Process optimization for a large US Bank

The Case in Question
One of the largest banks in the USA had rolled out a Request for Proposal (RFP) for their back office process. The client encountered long wait times and hence the Turn Around Time for delivery was significantly affected.

Wipro was in the race with another competitor, to prove the ability, skills and expertise in the area of process optimization.
The Solution

Wipro’s due diligence team performed in-depth analysis of all the client processes on site. These observations formed an input to the simulation model. The simulation model highlighted several process inefficiencies and this model was leveraged to build a robust optimized process for the client.

Business Benefits

The Turn Around Time (TAT) for the process improved by 50% from 5 days to 2.5 days. With this improvement, the client confidence in Wipro improved exponentially and Wipro won the contract from the client.

Case Study 2: Process optimization for a Finance & Accounts (F&A) Process

The Case in Question

The client is one of the worlds largest Consumer Electronics and Entertainment Company. Wipro and other competitors were required to complete the pre-process Due Diligence and suggest process transformation opportunities. The challenge was to exceed the customer expectations on the Due Diligence front by surpassing the benchmark set by another vendor in competition.

The Solution

Wipro took an impressive approach of simulating the “To-Be” process and demonstrating this to the client, in addition to suggesting critical changes in the client processes. Significant business benefits were clear to the client as there was high visibility into the process at various stages. Wipro achieved this by implementing radical changes to the client’s processes in real time.
Business Benefits

With the successful approach adopted, the client awarded the contract to Wipro which spanned 22 different roles. Additionally Wipro was chosen by the client to conduct Due Diligence for another process, which involved over 30 roles.

Conclusion

Simulation & Process Modeling is the proven methodology for the future of the industry. With client expectations consistently rising in areas of transformation, and solutions that can be easily implemented within a short timeframe, it is crucial for vendors to respond to this need. While process transformation is desired by clients, Simulation has proved to be the reliable methodology in identifying and removing internal inefficiencies.
Appendix

Acronyms Used

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>BPMS</td>
<td>Business Process Management System</td>
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<tr>
<td>RFP</td>
<td>Request for Proposal</td>
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<tr>
<td>TAT</td>
<td>Turn Around Time</td>
</tr>
<tr>
<td>F &amp; A</td>
<td>Finance &amp; Accounts</td>
</tr>
<tr>
<td>DoE</td>
<td>Design of Experiments</td>
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</tbody>
</table>

References

1. **Gartner Research**: For magic quadrant on Market Leader analysis for vendors providing the process simulation and modeling tools.  
   (http://www.gartner.com/technology/media-products/reprints/lombardi/article2/article2.html)

About the Author

Shalabh Srivastava is a Manager with the Process Lab in Mission Quality and has over 9 years of experience in Process Excellence, Six Sigma and Lean. His experience spans across various leading global organizations and industries such as Automobile and ITeS with focus on process improvement methodologies and use of technology solutions for effective process management.
About Wipro Technologies

Wipro is the first PCMM Level 5 and SEI CMMi Level 5 certified IT Services Company globally. Wipro provides comprehensive IT solutions and services (including Systems Integration, IS Outsourcing, Package Implementation, Software Application Development and Maintenance) and Research & Development Services (hardware and software design, development and implementation) to corporations globally.

Wipro’s unique value proposition is further delivered through our pioneering offshore Outsourcing Model and stringent quality processes of SEI and Six Sigma.

Wipro in Business Unit

Wipro BPO is uniquely positioned to service customer requirements by leveraging its tenets of quality and innovation, the best people talent, self sustaining process framework and domain knowledge. We offer customized service offerings; translating into the most flexible and cost effective services of the highest quality for our customers.

With over 19,000 people, operating out of different locations (India and Eastern Europe), Wipro BPO has been a critical partner to all its customers in achieving their business goals. Wipro BPO services customers in various industries including Banking & Capital Markets, Insurance, Travel & Hospitality, Hi-Tech Manufacturing, Telecom & Healthcare sectors. Wipro BPO also has deep expertise in delivering process specific solutions in areas like Finance & Accounting, Procurement, HR Services, Loyalty Services and Knowledge Services.

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