Steven Pauly | Curriculum Vitae

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Profile

What: Applied mathematician in the real-world

Why: optimize Inventory control & forecasting in practice by closing the gap between theory And practice

How:

- Test & follow up all research & apply the best techniques for practical ends
- Test & improve present research for practical ends
- Optimization of specific and general, not yet researched and useful for practice, matters by building mathematical models and finding the optimal solution in practice through simulation(-optimization) and standard mathematical techniques

Mission: close the gap between theory & practice in the field of inventory control to achieve inventory optimization (= minimize inventory related costs)

A passion and containing a high level of knowledge in applied mathematics & operations research

Specific proven specialties: descriptive analytics, predictive analytics (main focus on statistical forecasting), prescriptive analytics (main focus on order quantities, service level settings, safety stock calculations and specific matters in inventory control) and inventory strategy.

Consultant in inventory control and forecasting. In-depth knowledge on theoretical inventory control, especially in the field of order quantity determination, forecasting, applied mathematics on inventory control, service level settings, perishable goods, business analysis and mathematical optimization modelling.

Besides this, experienced in supply chain optimization improvements, project management, educational training, implementation of inventory and forecasting optimization software and database scripting (SQL). Especially experienced in production and wholesale environments.

Next to all this, I write scientific publications to pave the path from theory to practice. The goal is to investigate theoretical approaches and see if they can be implemented in companies or can serve to gain crucial insights that can help companies in making decisions. Personal publications can be found via the following link: https://www.researchgate.net/profile/Steven_Pauly . Other publications or working papers from my hand can be received by emailing me on my email address: s.pauly@slimstock.com

Feel free to visit my LinkedIn-profile as well: https://www.linkedin.com/in/steven-pauly-80760b48/

Skills & Abilities

- Analytic thinking
- Ability to solve complex supply chain problems in practice throughout theoretical (mathematical) knowledge
- Highly communicative
- Didactic skills on theoretical subjects
- Intellectually curious
- Hands-on
- OR-techniques
- Programming skills in SQL, C++, Python and R.
- Scientific, but practical mind
- High-end knowledge on Microsoft Office (excel, powerpoint, word)
- Native Dutch speaker.
- English (fluently)
- French (basic-fluently)
- German (basic)
- Result-driven

Experience

Supply chain consultant — Slimstock BV 09/'14 — present

Slimstock is the specialist in forecasting & inventory management and the European market leader in a wide range of industries and offers companies a complete solution for inventory optimization.

Personal tasks and responsibilities:

- Inventory and forecasting optimization throughout the Slim4-software and consultancy

- Project management

- Business analysis

- Training on inventory control and forecasting

- Research on Inventory control and forecasting (in order to support developement). This also contains following up new trends (machine learning, mathematical optimization, computational statistics, data mining,...) and translating it to inventory control and forecasting software in order that practice can benefit the most (user-friendly, scientifically correct and focused on minimizing inventory related costs).

- Internal training consultants on stochastic inventory control

- Solving specific, quantitive customer questions

- Mathematical modelling of real-life situations to simplify, redefine and improve theoretical inventory control formulas or testing the robustness of it to improve complex decision variables in practice

- Content writing focused on knowledge sharing & research in the field of inventory control and forecasting

- Supervising graduation projects in the field of supply chain management

- Speaker at graduate or undergraduate courses or commercial events

- Developement of machine learning techniques, data mining, mathematical optimization and computational statistics

- Serving as an inventory control and forecasting expert towards companies and research bureaus (eg Garnter)

Young Professional- Slimstock BV 09/’14-09/’16

The Top Talent program is no ordinary graduate scheme and is not for the average student. Slimstock selects only the most talented graduates in econometrics, mathematics or operations research. During this two-year

program, you will share and enhance your knowledge in order to accelerate your growth towards a leadership position. Slimstock aim to have all graduates in leading supply chain roles within three years.
The goal here is really to bring theory to practice to develop so-called ‘white knights’.

Education

1. University of Hasselt — Graduate Supply Chain Management, with specialisms: stochastic inventory control, operations research & applied mathematics, Hasselt, Belgium, 2011-2014. Thesis: inventory optimization in multi-echelon environments

Publications

1. Inventory optimization: from theory to practice

The theory of inventory control has become a separate science in the last century. The advantage of a science is that we gain insight into the world around us and thus know the consequences of decisions in order to make optimal decisions. The theory behind inventory control offers us insight and optimal decisions in the two fundamental questions of it: 'how many to order’ and 'when to order'. This article contains 5 chapters that briefly describes some important matters in inventory control. These chapters are the basis for a complete training given at the Slimstock Academy, developed by Steven Pauly.

2. Improving re-order points settings in practice in a lost-sales inventory system (a working paper)

When setting re-order points in practice, there is often the use of a service level constraint, set by management. This way of re-order point setting is far from optimal from a total cost perspective. In theory, however, there is the use of an out-of-stock or backlogging cost, together with the other costs in an inventory system, to determine the optimal re-order point. This can be done with the use of a simple formula in closed form. In this article, we only look at a lost-sales inventory system with an out-of-stock cost. The determination

of this out-of-stock cost is seen as very hard in practice due to the unknown reaction of a customer when facing an out-of-stock. That is the reason why this simple formula isn't used in practice. This fact creates an enormous gap between theory and practice when talking about re-order points. This article aims to tighten that gap.
The approach is straightforward and simple. First, we will set up a mathematical model to set up re-order points, based on an objective function that reflects all costs related to an inventory system (out-of-stock costs, inventory costs and order costs). This model models the out-of-stock costs by taking into account the different reactions a customer can have when facing an out-of-stock. This we call the real optimal re-order point. Then, we will use the objective function to derive a simple and known formula in theory, where the out-of-stock costs are modelled indifferent of which reaction the customer will have. We will then look at the results this yields in setting up re-order points. The goal is then to evaluate both results based on total relevant costs and investigate if we can use the simple formula to obtain a re-order point or if we have to adjust the formula in some way. We thus will test the robustness of the simple formula and see how we can make it better with respect to total inventory related costs.

3. A (Q, r)- ordering policy for perishable items under a fill rate constraint

Due to inherent characteristics of products, items are subject to lose their value or usability overtime. A perishable inventory system has received increasing attentions in the past years. An ordering policy for deteriorating inventory system has become more and more important. This paper focuses on a way to r to find an optimal (Q, r)- order policy under a fill rate constraint. Much research is done by taking into consideration the risk obsolescence, but not the effect the order quantity has on the fill rate constraint when dealing with perishable items. We do take this into consideration and can therefore find an appropriate re-order point and re-order quantity. We advocate that this way of setting up (Q, r)- ordering policies need to be taken into account in (under)graduate courses. In addition to the mathematical model and the solution methodology, a simpler, practical approach is given that can be directly used in practice.

4. A practical, alternative approach for the use of Lagrange when dealing with EOQ-restrictions

While calculating a batch size for an SKU (Stock Keeping Unit) using the EOQ approach, one often uses the stand-alone approach. One does not look at interactions with other SKU's. However, in many cases one should take into account other SKU's as well. If e.g. space is restricted or cash is tight, using a stand-alone EOQ for all SKU could lead to invalid results. Needed space is not available, needed cash is not available or number of orders placed will be too high. The solution for this problem, EOQ under restriction, is generally the Lagrange-multiplier approach. Derivation and basics for this approach is mostly too complicated for practitioners and seldom used in daily inventory control. We propose a very easy to use and very easy to understand approach: the proportional approach. In this paper we show that the difference in total costs for the Lagrange approach and proportional approach is very small for 'normal' situations. For most practical situations the difference in costs will be less than 5%, in many situations even less than 2%. In certain circumstances both approach will even yield the same results. That's why we advocate using the proportional approach for a start.
Co-author: Paul Durlinger

5. Demand Decomposition-The Prerequisite for better Forecasting (a working paper)

Spikes and outliers in data prevent an accurate forecast. Distinguishing between known demand and unknown demand increases forecast accuracy. This has a positive effect on needed safetystock and desired service-level towards the customer. In practice we observed over 50% reductions for needed safety stock, while imporoving service-levels. We show the important role of Management for using demand decomposition.

Blogs

1. A mathematical blog

https://www.slideshare.net/StevenPauly/mathematical-blog-1-86968221?trk=v-feed

Extracurricular activities

- Since July, 2017, part of the advisory group of the education Committee of Engineering Science and

Operational Research at Ghent University (CESORGU).

- Running (1/2 and full marathons)

- Tennis (recreational)