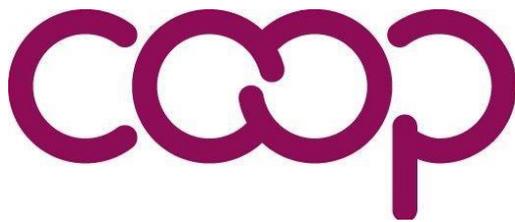


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The SouCoop system as fostering a data culture for cooperativism

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Abstract :

The use of data to support decisions and measure results is an increasingly common practice in the current economy. Such information is able to guide and evidence the performance of organizations. Given this importance, one of the challenges faced by the cooperative business model is to obtain robust and reliable data on the impact of cooperativism. This paper aims to present SouCoop – the Brazilian cooperativism database. Developed by the Organization of Brazilian Cooperatives, this system aims to unite registration, financial and business information from cooperatives throughout Brazil. With a focus on transparency and continuous improvement, SouCoop makes it possible for Brazilian cooperatives' data to be stored in one place, in addition to reducing the bureaucracy of the registration process. Through this systematization, the system has as its main results the Yearbook of Brazilian Cooperativism: a document that compiles the annual information results of all cooperatives registered with the OCB System. SouCoop has, in its essence, improvements based on agile methodologies and is an extremely important tool to foster a data culture in cooperativism.

Keywords: Data culture, systems, data driven organizations, data, cooperativism

1. Introduction: pillars of data driven organizations

In the current economy there is no longer room for important decisions based on intuition and guesswork. For those who want to be relevant and have space in the market, it is necessary to adopt accurate measures based on strategic information. Thus, there is a consensus among many experts that data can show the level of performance of the organization, the product that sells or does not sell and, mainly, its performance. The survey “Data Never Sleeps” shows the dimension that data are produced and shared in the world. Every minute Google performs seven million searches; more than six million people buy something online. All this information provides a basis for action and, in a competitive world, giving up this transformation is unacceptable.

Another view can be seen in the report “Data driven decision making in the “new normal”. The article shows that the best decision techniques are based on the use of high quality and reliable data. The more unpredictable the circumstances, the more important it is for organisations to be adaptable and able to change to these fluid circumstances. If data-driven decision making was a competitive advantage before the pandemic, now it is a tool for survival. If historical precedence can't help with the analysis of data, what will? The answer is “what if” scenario simulations – but with a twist – as most contemporary “what if” scenario simulations would have used historical data and patterns to predict.

The new, post-pandemic “what if” simulations will need to work with much more uncertain data and much less of it – and answer very different questions. Simulators will need to use a digital replica of the business and draw on algorithms and experts that are better at working with lower data volumes and can calculate thousands or millions of possible outcomes based on the latest circumstances at any given point in time. (DELOITTE, 2022)

Case literature and economic theory also suggest a potential connection between data driven decision making and productivity. Brynjolfsson et al 2011 show by analyzing a large sample of firms, that data driven decision making is indeed associated with higher productivity and market value, and that there is some evidence that is associated with certain measures of profitability (ROE, asset utilization).

There is no room to participate in the modern economy without using data. Digital transformation is derived from the abundance of information. A data driven management – that is, guided by data – uses them as allies so that decision-making is

guided by complex and assertive information. A data driven organization will use the data as critical evidence to help inform and influence strategy. There will be an evidence-based culture in which data can be trusted and the analysis is highly relevant, informative, and used to determine next steps (ANDERSON, 2015).

If during the first and second Industrial Revolution oil was essential for the development of industries and society as a whole, today we have a new “fuel”. “Data is the new oil”, coined London mathematician Clive Humby, referring to the new digital economy. Anderson 2015, also mention in his work several types of activities that truly data-driven organizations engage in:

1. A data-driven organization may be continuously testing. It might be A/B testing checkout flow on a website or testing email subject lines in a marketing campaign. LinkedIn, for instance, runs 200 experiments per day, whereas Etsy runs dozens of experiments simultaneously. Tests may also include user testing—working directly with actual customers or users to obtain direct feedback on possible new features or products.
2. A data-driven organization may have a continuous improvement mindset. It may be involved in repeated optimization of core processes, such as shaving minutes off manufacturing times or decreasing cost per acquisition. This comes about through careful analysis, crafting mathematical or statistical models, and simulation.
3. A data-driven organization may be involved in predictive modeling, forecasting sales, stock prices, or company revenue, but importantly feeding the prediction errors and other learning back into the models to help improve them.
4. A data-driven organization will almost certainly be choosing among future options or actions using a suite of weighted variables. Resources are always finite, and there are always pros and cons for different reasonable courses of action. One should gather data for each of the set of variables that are of concern or interest and determine weights among those to generate a final leading decision.

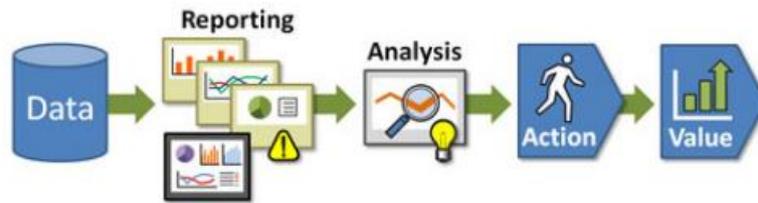


Figure1: The analytics value chain. Source: Anderson 2015 and Dykes 2010.

But why should organizations be data-driven? In summary, we can list five main benefits that data-oriented management can bring:

1. Assertiveness in decision making

Without data, decisions are motivated by the experience and instinct of leaders and managements. This model proves to be limited, since crucial decisions are made based on subjective concepts and purely personal sensations. Data, on the other hand, provide arguments capable of supporting sensible choices.

2. Synergy between the sectors of the cooperative

The quality of information that will guide decisions demands an integrated organization, in which all sectors are connected. There is no point in having a myriad of data collected by the different areas of the cooperative if they are not available for consultation by other sectors that can take advantage of them. Overcoming this difficulty, leaders will be able to see a broader horizon of how the organization operates and how different sectors can work together. In addition to analysts and managers, the front line of operations also benefits from data, optimizing day-to-day tasks.

3. Clear vision of performance and results

Maintaining adequate systems for data management enables access to more refined and complex information. This makes it possible to assess with greater accuracy and nuance the performance and results of the cooperative. This dynamic and wealth of information facilitates obtaining more accurate diagnoses of bottlenecks and points of concern in the institution's structure. On the other hand, such data also show where good opportunities are and underline what the cooperative is doing right.

4. Cost Optimization

When you have a complete diagnosis of the strengths and weaknesses in the cooperative's operation, the targeting of resources becomes more effective. The trial and error process, which consumes resources without optimization, wastes space.

Synergy also affects this factor, since a broad view of the cooperative's expenses facilitates the identification of points where it is possible to reduce operating costs. On the other hand, investment for growth is also more accurate.

5. Failure prevention

The data can report failures in advance in the institution's processes, improving error prevention policies. Complex information makes it easy to see bottlenecks and blind spots that are otherwise very difficult to see.

Technology, however, is just a tool. The people who exercise data driven management are in fact. Therefore, a cooperative that intends to guide its decisions by data must, first, develop the mentality to do so. Transforming an entrenched culture can prove to be a complicated and gradual task. David Waller, data analytics manager from Harvard Business Review, listed ten steps to creating a data-driven culture. Are they:

1. The data driven culture must start at the very top: leaders must be the first to adopt data-driven solutions, leading employees by example.
2. Select metrics carefully and cunningly: Measuring performance by the wrong metrics can do harm. Data need to be analyzed and parameterized carefully.
3. Do not isolate your data scientists: the professionals who will manage the collection and processing of data need to be integrated into all areas of the cooperative.
4. Solve data access problems quickly: information must always be available for use when needed, creating a query routine.
5. Quantify uncertainties: even in data analysis, there are no absolute truths. Margins of error need to be taken into account in decisions.
6. Make proofs of concept simple and robust, instead of complicated and fragile: many good ideas, even those that emerge from data analysis, do not hold up in practice – hence the importance of well-done tests.
7. Specialized training must be carried out at the right time: there is no point in training employees in data analysis tools too far in advance. What is not practiced ends up being forgotten.
8. Use data analytics to help employees, not just customers: data is very useful for marketing and sales, but it also plays an important role in people management.
9. Willingness to trade flexibility for consistency – at least in the short term: using different sources and services can lead to conflicting information and inadequacy between devices.

10. Get in the habit of explaining choices made after analysis: data can be interpreted in different ways, there is not always a “right answer”. Reasoning what the reasons for a decision are helps to give it consistency.

Culture, then, is the key. This is a multifaceted problem that involves data quality and sharing, analyst hiring and training, communication, analytical organizational structure, metric design, A/B testing, decision-making processes, and more. (ANDERSON, 2015)

Thus, this article aims to shed light on the discussion of the existence of a data culture within cooperativism and, in addition, to raise the question of how cooperatives can become data-driven organizations. As a way of guiding this argument, the methodology applied to the SouCoop system and the results that can be obtained through the collection of information made possible by the system will be shown.

2. Methodology

The job market has become increasingly disputed and the level of demand from organizations has increased considerably. Thus, applying project management methodologies becomes essential. Obviously, each enterprise has its own particularities, requiring specific strategies. It is valid to say that managing a project involves the application of knowledge, tools and techniques so that the defined objectives are achieved. The use of project management methodologies allows the proper execution of all the activities involved and guarantees efficiency to the process. Most agile methodologies are nothing new. What differentiates them from traditional methodologies are their focus and values. The idea behind agile methodologies is to focus on people and not on processes or algorithms. In addition, there is the concern of spending less time on documentation and more on implementation. A characteristic of agile methodologies is that they are adaptive to the rather than being predictive. As a result, they adapt to new factors arising from the development of the project, instead of trying to analyze in advance everything that can happen in the course of development. Among some of the main methods used in organizations around the world, it is worth mentioning Scrum, which proposes the division of the project into small cycles (called sprints), with the validation of activities by frequent alignment meetings. (DOS SANTOS SOARES, 2004)

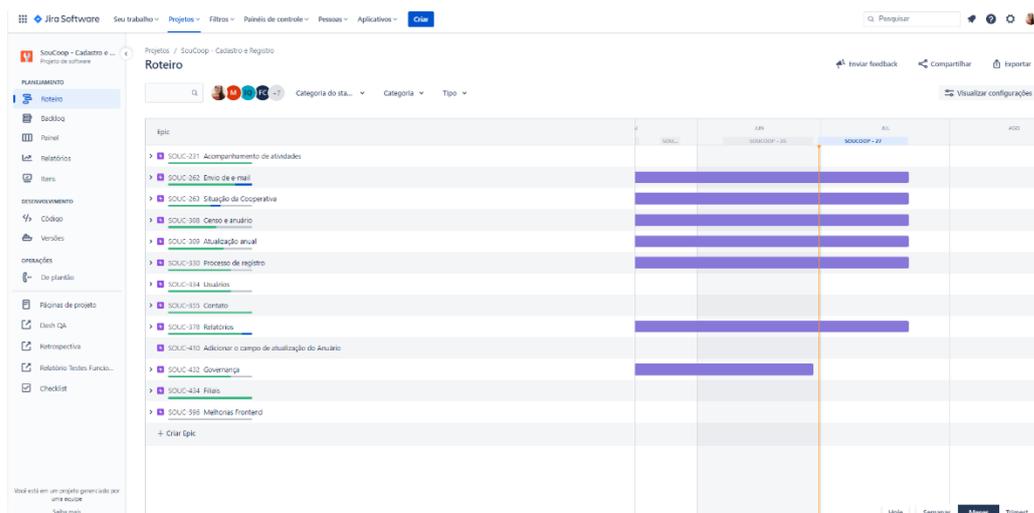


Figure 2: SouCoop planning. Source: OCB System.

Currently, SouCoop applies this methodology so that the system always goes through cycles of continuous improvement. The sprints, that is, the cycles of each project, last an average of three weeks and focus on improvements, corrections, changes in the system structure, among other changes. In 2021 alone, SouCoop received more than 60 suggestions for improvements. Such notes were taken to the development team that performed 80% of the requested changes. Today, the system already has 45 improvements delivered in 2022.

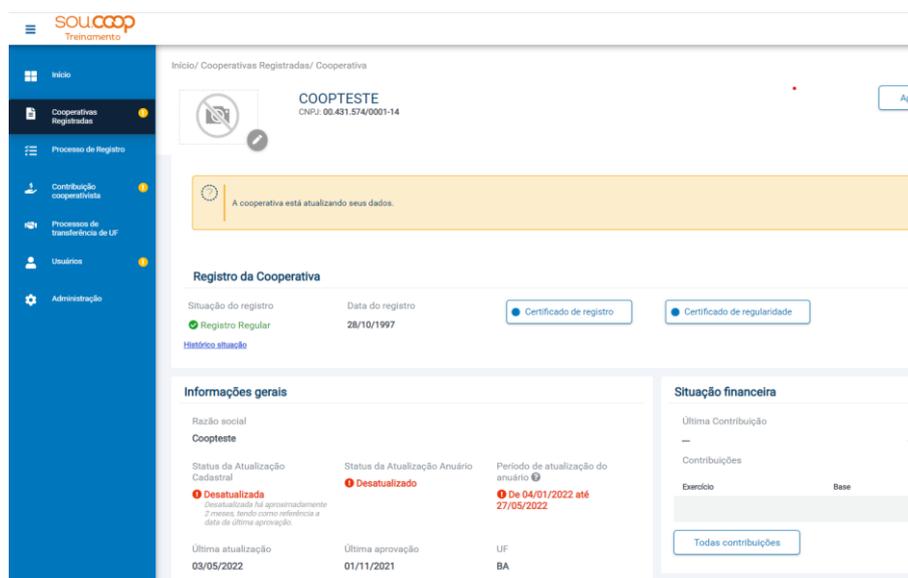


Figure 2: Print Screen form SouCoop System. Source: OCB System.

3. Results and conclusions

By allowing the consolidation of all data in a single place, SouCoop has as one of its main results the Yearbook of Brazilian Cooperativism. The website gathers information from all cooperatives in Brazil in a sectoral manner, in addition to providing complementary information. The publication is in its fourth year and raises the importance of having a data culture within cooperativism.



Figure 3: Yearbook of Brazilian Cooperativism. Source: OCB System

Thus, as mentioned earlier, the objective of this work was to raise discussions about the tools that exist today so that more organizations around the world, especially cooperatives, become data driven. Cooperativism has come a long way in systematizing data, performing annual collections and continuous improvements, but there are still many challenges for the cooperative business model to be able to be entirely guided by data.

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