# INNOVATING WITH THE MATRIX GUT APPLIED
# IN ONE PLATFORM OF SERVICES

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## ABSTRACT

**T**his study is based on the Contingency Theory and has the purpose to assess the employment of the GUT Matrix in a microbusiness enterprise of technical assistance services, operating in the city of Porto Velho, state of Rondônia, in the Brazilian Amazon. It considers the internal and external aspects of the said enterprise, in order to place it in line with the GUT matrix, appointing the valid characteristics and proposing the required innovation, in view of the assessment made. The methodology adopted was that of Case Study and the usual procedures applied to quali-quantitative research, as recommended by Oliveira (2011). The data collection involved a theoretical review, in loco visits and interview with the owner of the microbusiness enterprise. The SWOT Matrix was applied as an auxiliary tool in the process. As a result, it was observed that the enterprise presented problems that demanded immediate action, in order to avoid the worsening of the situation, in the short term. In this context, it was used the SWOT Matrix to identify the problems and the GUT Matrix to detect the priority scale to find an innovative solution. The innovation suggested to solve the most severe problems was the adoption of a reverse logistics' policy, which will demand the removal of all stored goods to their original place, in order to have a sustainable destination for them and, in turn, generate profits for the enterprise from the selling of these electronic raw materials. This research may serve for those interested in innovation and employment of the GUT Matrix, as for those involved in the studied subject matter.

Keywords: Innovation. Reversed Logistics. GUT Matrix. SWOT Matrix. Amazon.

## 1. INTRODUCTION

The GUT Matrix is a tool used in the organizational world for prioritizing problems that must to be solved by the management. It analyzes the organization's activities and characteristics, in order to classify its deficiencies in accordance with the gravity of their impacts, the need for an urgent resolution and their tendency to occur gradually or rapidly.

The purpose of this research is to analyze the employment of the GUT Matrix in a microbusiness enterprise of technical assistance services, operating in the city of Porto Velho, State of Rondônia, in the Brazilian Amazon. It analyzes the internal and external aspects of the referred enterprise, in order to place it in line with the GUT Matrix, raising the valid characteristics and proposing the required innovation, in view of the assessment made.

To this end, a theoretical and conceptual review was undertaken to see whether the standards adopted by the researched company are in line with the theoretical approach, as regarded in concepts pertaining to the Contingency Theory, the SWOT Matrix, the GUT Matrix, organizational innovation and reverse logistics.

## 2. THEORETICAL AND CONCEPTUAL REVIEW

This task demanded knowledge of essential theoretical aspects, in order to place in evidence a comparison between the standards adopted by the surveyed enterprise and the concepts obtained from bibliographical reviews in websites and in other information sources. The central reference is the Contingency Theory (CHIAVENATO, 2014), according to which the organization should be regularly adapted to the environment, its emerging conditions and scenarios. This theory sustains that there is a dependable link between the enterprise and its surrounding environment, which allows the organization to pursue its targets in an efficacious way, provided it is aware of this relationship and is capable of identifying the opportunities and threats it could bring to the enterprise. Together with the environment, the technology can equally influence the internal characteristics, through its impact on the organization. The theory also stresses that the organization's structure and performance can be classified as dependent variables, whereas the environment and the technology as independent variables. The table 1 shows the theory's framework.

**Table 1:  Contingency Theory**
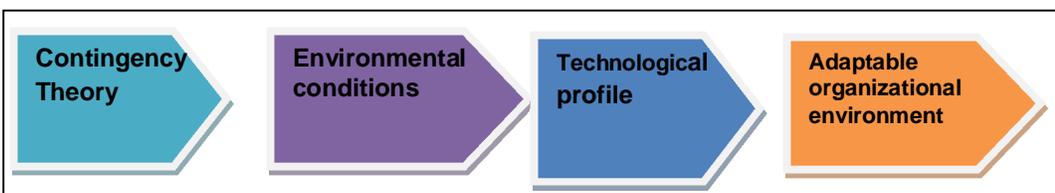


**Source:** the authors.

### 2.1 The SWOT Matrix

For Queiroz (2012), the SWOT5 Matrix is a tool of strategic planning that analyzes the organizations' external and internal relationships. It is composed of Strengths (strong factors), Weakness (weak factors), Opportunities and Threats, and provides an analysis of the aspects the enterprise could improve, thus facilitating the decision-making process. By using this matrix, the manager will be able to propose and implement strategic measures for the company to achieve its targets and objectives.

### 2.2 Matriz GUT

According to Bezerra *et al.* (2014), the GUT Matrix is a tool that seeks response to questions in a rational way, by separating and prioritizing problems that should be solved. The actions to be given priority in the organization must be in consonance with the Gravity, Urgency and Tendency (GUT) of the problems confronted by the enterprise. In this context, the factor Gravity refers to results' damage that could arise in the medium and long term; the Urgency's main determining factor is the time pressure to solve the problems; and Tendency refers to the situation's worsening potential that could evolve with time.

The author suggests the following steps when adopting this tool: list the problems for analysis, score each element according to its intensity, multiply the values scored for each situation and finally prioritize the factor presenting higher result value. The table 1 offers a statement of the fields of analysis and classification of this matrix.

**Table 1: GUT Matriz**

| GUT | Pontos | | | | | GxUxT |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | |
| **Gravity** | Problem without gravity. | Problem with low gravity. | Severe Problem. | Very severe Problem. | Extremely severe Problem. | 1x2x3x4x5 =120 |
| **Urgency** | Situation can wait. | Low urgency. Could wait a bit. | Shoud be solved as fast as possible. | Urgent Situation. | Immediate action. | 1x2x3x4x5 =120 |
| **Tendency** | Situation will not change if nothing is done. | Situation to worsen in the long term. | Situationt o worsen in the medium term. | Situation to worsen in the short term. | Situation to worsen immediately if nothing is done. | 1x2x3x4x5 =120 |

**Source:** the authors.

### 2.3 Innovation in the organization

Oliveira and Cavalcanti *et al.* (2011) characterize innovation within a framework restricted to technology, in view of the research and development demanded by the creation of a new product or improvement of existing products and processes. They stress that innovation can add value to the enterprise, provided it launches innovative items that could stand out in the market and have a competitive participation in it, directly implying on changes within the internal organizational system. The authors also underline that innovation is created from the selling of new products and the opening of new distribution channels. Therefore, each enterprise ought to identify opportunities to innovate and to stand out from its competitors.

### 2.3.1 Reverse Logistics

Reverse logistics is a sustainable tool conceived as a solution to reduce increasingly electronic trash, in view of the rise of social classes' consumption demand and the easy access to new technologies. Nogueira (2011) defines reverse logistics as that in which consumption products return to their points of origin to be given an environmentally correct destination. Table 2 shows how this process occurs.

**Table 2:** Reverse Logistics Process
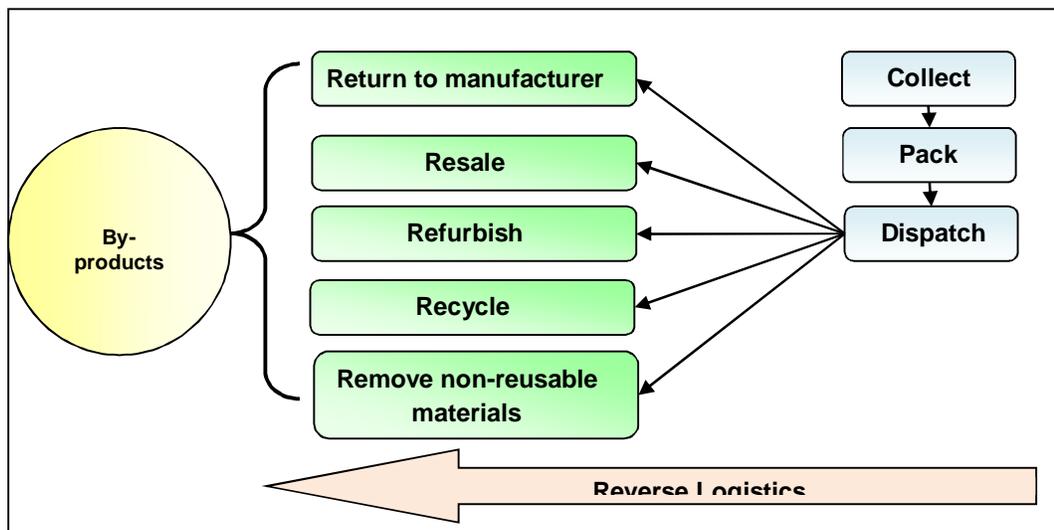


**Source**: Adapted from Nogueira (2011) by the authors.

### 3. METHODOLOGY

The methodology adopted in this research is that of case study, which, according to Nogueira (2011), comprises an empirical survey aimed at studying a contemporary phenomenon within the ambiance it is located. Therefore, it is an exploratory research that seeks to enhance the knowledge of the studied subject matter, in order to define the problem with precision. This study can be classified as an action-research (OLIVEIRA, 2011), as it identifies priority problems within the assessed situation, thus defining an agenda for the resolution of the depicted results and establishing a collaborative and participatory approach between the researcher and the organization's personnel in the process, which provides an interaction between theory and practice. It is a qualitative and quantitative survey, given the descriptive data analysis and the multiplication of data collected from the use of the GUT Matrix. The proceedings are steps adopted by the survey in order to reach the research results. In the present study, the steps adopted are displayed in table 3.

**Table 3:  Specification of adopted procedures**

| Methodological Points | Specifications |
|---|---|
| 1.  Theoretical Review | The search focused on research topics that could serve as a basis for discussion of concepts and for choosing the theoretical approach used in the present study. The consultations comprised of electronic periodicals, books, websites and articles. |
| 2.  Methodological Procedures | An *in loco* visit was marked by an interview with the business owner. |
| 3.  SWOT Analysis | Throughout the data analysis, relevant information was collected to build the SWOT analysis. |
| 4.  GUT Matrix | The interview enabled the construction of a matrix listing the main problems confronted by the micro-enterprise, in accordance with their gravity, urgency and tendency. |
| 5.  Result Analysis | Interpretation of the data collected and its presentation in diagrams and data charts. |

**Source:** the authors

## 3. CASE STUDY ABOUT GUT MATRIX IN A AMAZONIAN MICROENTERPRISE

This study was undertaken in a microenterprise, which for 20 years is being engaged in providing technical assistance services and selling electronic appliances in the city of Porto Velho, Capital of the State of Rondônia, in the Brazilian Amazon. In an interview with the enterprise owner, it was possible to collect information on the major confronted problems, which contributed to build the SWOT and GUT Matrices, considering that the local market is undergoing a "maturity phase", thus leading the enterprise to seek innovative routes to give impulse to its growth in the region. In the Table 3 shows the flowchart of the process of technical assistance services in the enterprise.

**Table 3: Flowchart of the process of technical assistance services in the enterprise**
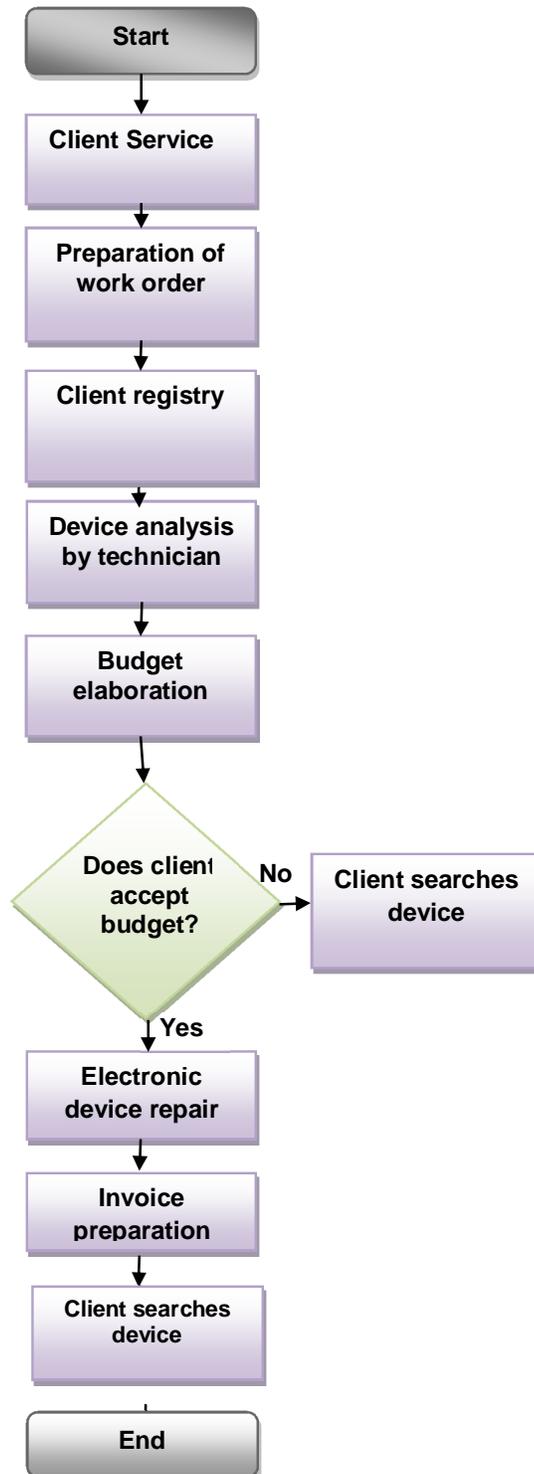


**Source:** the authors.

From the understanding of the service delivery process, it was possible to compare it with the contingency theory. The impact of the technology in the enterprise can be seen in its well structured information system. However, with regard to the technicians, it was noted a lack of training on new technologies, especially for provinding services to modern equipments. The enterprise seeks to adapt to the conditions imposed by the environment, particularly in the region it is located.

The Contingency Theory reflects in the organization in view of the changes that take place in the environment it operates. In this scenario, therefore, new strategies should be adopted to achieve positive results for the organization.

The tool defined to aid the accounting under GUT was the SWOT Matrix, as it provides an analysis of the enterprise's internal and external environment. Its categories (opportunities, threats, strong and weak factors), enable to design an outline of the needed improvements and adjustments. Table 5 shows the SWOT Matrix of the studied enterprise.

**Table 5: SWOT Matrix**

| Internal environment | External environment |
|---|---|
| **Strong Factors**<br>- Service assurance<br>- Good Attendance<br>- Cost-benefit ratio | **Opportunities**<br>**-** Planning<br>- Collect and deliver repaired equipment<br>- Infrastructure improvement<br>- Retaining new clients |
| **Weak Factors**<br>**-** Many clients do not return to collect the electronic equipments.<br>- Lack of capacity of technicians to deal with new technologies<br>- Delay in the repair of LCD and LED TVs | **Threats**<br>**-** Lack of appropriate location for storage of equipments<br>- Sector maturity in this field |

**Source:** the authors.

The results derived from the adoption of the SWOT Matrix in the microenterprise served as a basis for building the GUT Matrix: from the weak factors and threats it was possible to list the problems found; and from the opportunities, the steps to solve the problems were define.

The characteristics assessed throughout the interview, the enterprise survey   and the analysis under the SWOT Matrix resulted on the problems that were enlisted and analyzed conforming to their Gravity, Urgency and Tendency (GUT).

Thus, numbers from 1 to 5 were assigned, being number 1 for low intensity and number 5 for high intensity. This scale was conceived by multiplying the factors, assigning a value to each analyzed problem. The GUT Matrix (Table 6) shows the problems that received higher scores.

**Table 6: GUT Matrix**

| Problems found | G (Gravity) | U (Urgency) | T (Tendency) | GxUxT | Priority Scale |
|---|---|---|---|---|---|
| - Lack of appropriate location for storage of repaired equipments | 5 | 5 | 4 | 5x4x4= 80 | **2nd** |
| - Lack of capacity of technicians to deal with new technologies | 2 | 4 | 5 | 2x4x5= 40 | **4th** |
| - Delay in the repair of LCD and LED TVs | 3 | 4 | 5 | 3x4x5= 60 | **3rd** |
| - Many clients do not return to pick up the electronic equipments. | 4 | 4 | 5 | 4x5x5= 100 | **1st** |
| - Sector maturity in this field | 3 | 2 | 2 | 3x2x2= 12 | **5th** |

**Source:** the authors.

It is noted in the analyzed matrix that the first two prioritized problems are linked to the large demand for electronic equipments not collected by the clients, thus reducing the storage space for the repaired and unrepairable equipments. As for the third and fourth identified factors, the delay in repairing LCD and LED TVs owed to the technicians lack of training to deal with these new technologies and the high prices of spare parts for their maintenance. In view of this restriction, they try to solve the problems found in the equipments by talking to other technicians from authorized companies that operate in the area. The fifth problem scored a low rate in Gravity, Urgency and Tendency, given the stability of the market in this field, thus leading the microenterprise to implement measures to stand out from its competitors and secure increased growth. This problem can be worsened in the long-term.

For each problem detected, innovative actions are suggested for the solution of each one of them, in consonance with their respective priorities, having in mind that the GUT methodology assists the organization in its search for strategies that could lead it to find solutions, maintain and enhance its business. Table 7 lists the suggested solutions for innovation in the microenterprise.
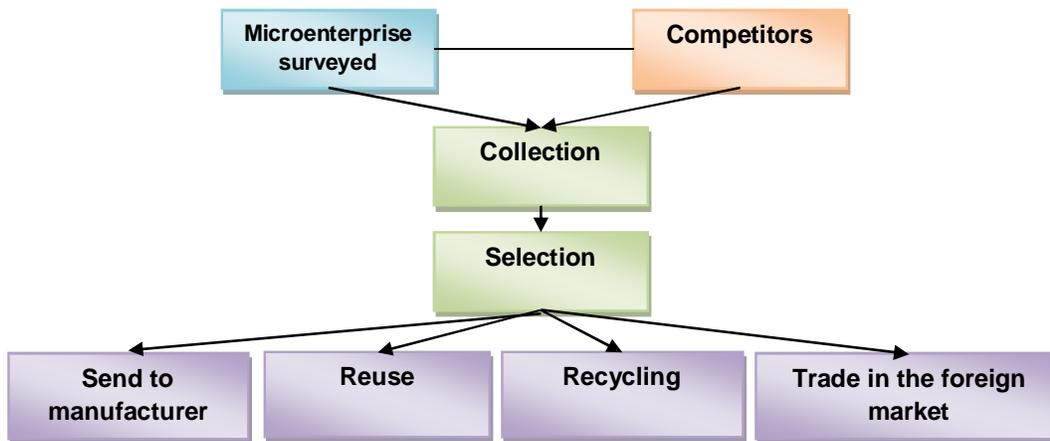
**Table 7: Suggestions for solving the problems**

| Previous situation | Demanded Innovation |
|---|---|
| 1st - **Many clients do not return to collect the electronic equipments.** | -Creation of a term of commitment between the client and the enterprise. Should the client not collect the equipment within 180 days, it will be sold by the budgeted value or sent to reversed logistics. |
| 2nd **- Lack of appropriate location for storage of repaired equipments** | -Foster the creation of a network of contacts with competitors, to jointly find a place for operating the reverse logistics process in equipments that expired the deadline laid down in the commitment term.<br><br>-Expand the shop structure for storage of the repaired equipments and of those within the deadline laid down in the commitment term.<br><br>-Purchase of an appropriate vehicle to collect and deliver the equipments, thus improving the ties with clients and attracting their fidelity. |
| 3rd – **Delay in the repair of LCD and LEDTVs** | -Market survey to find reliable and low cost suppliers for the purchase of LCD and LED plates and screens. |
| 4th **- Lack of capacity of technicians to deal with the new technologies** | -Capacity-building courses on maintenance of LCD and LED TVs directed to electronics technicians. |
| 5th **- Sector Maturity in this field** | -Marketing survey to assess the viability of growth in this sector. |

**Source:** the authors.

As for reverse logistics, in addition of being a sustainable innovation, it brings to the enterprise a social responsibility in relation to the community in which it operates. It also contributes to increase the company's profitability from the selling of materials that would be otherwise discarded. In the case of the studied microenterprise, the use of this tool will make it stand out in a market undergoing a maturity phase, that is, innovating to grow, generating sustainability, social responsibility and profitability, as shown in the Table 8.

**Table 8: Reverse Logistics as employed in the surveyed microenterprise**

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┌─────────────────┐                    ┌─────────────────┐
│  Microenterprise│                    │   Competitors   │
│     surveyed    │                    │                 │
└─────────────────┘                    └─────────────────┘
                    ┌──────────────┐
                    │  Collection  │
                    └──────────────┘
                    ┌──────────────┐
                    │  Selection   │
                    └──────────────┘
┌──────────────┐ ┌──────────────┐ ┌──────────────┐ ┌──────────────────┐
│   Send to    │ │    Reuse     │ │  Recycling   │ │ Trade in the     │
│ manufacturer │ │              │ │              │ │ foreign market   │
└──────────────┘ └──────────────┘ └──────────────┘ └──────────────────┘
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**Source:** the authors.

## 5. FINAL REMARKS

The objetives pursued in the present research were achieved. It was noted that the GUT matrix is a guiding tool for organizations, in which it is possible to know, in advance, and within a priority order, which problems should be solved, thus avoiding bigger problems in the future. The matrix enabled the proposition of innovative improvements, being the reverse logistics one of its major tools, as it enables the businessman to obtain profits, restructure its storage room and operate in a sustainable way.

This study developed an analysis regarding the adoption of theoretical concepts sustained by the Contingency Theory, the GUT and SWOT Matrices and the reverse logistics within a microenterprise operating in the field of electronic equipments' service provision, in the city of Porto Velho, Rondônia, a state of the Brazilian Amazon.

## 6. ACKNOWLEDGMENTS

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