

UDC 658.52.011.56: 330.47

Benefits of restaurant automation

Zinyuhina Ekaterina Vladimirovna

Third year student of the business-informatics faculty,

Southern Federal University,

P.O. Box 344006, Bol'shaya Sadovaya str., No. 105, Rostov-on-Don, Russia;

e-mail: kate.zinyuhina@gmail.com

Abstract

Restaurants present some significant and unique operational challenges as a service business. That's why using the latest software is necessary to obtain the maximum profit and compete in the market. Automation can benefit this specific area by quick access to all aspects of the restaurant, such as staff management, finances, table reservations, menu, video surveillance, etc. This paper introduces the main objectives of restaurant automation, analysis of the main competitive software products in Russia, and shows the real example of automation effect based on "Rice" restaurant chain.

Keywords

Automation, restaurant, software, benefits, integrated system.

Introduction

The combination of words "restaurant automation" has become a common term for Russian restaurateurs, suppliers of hardware and software. It has general and narrow interpretations. In this article, the term "restaurant" has a

general meaning: any catering institution. Even so, the "automation" is interpreted as a narrow term, and does not directly affect the production process (cooking), applies only the information components of business: accounting, document management, sales and other processes associated with data processing. Restaurant

business is one of the fastest growing areas of private enterprise, so the demand for automation systems is stable. Automation has become a necessary condition for the competitiveness of businesses. At the moment the number of automated restaurants, cafes, fast food outlets, corporate enterprises and their chains in Russia counts in the tens of thousands, while continuing to grow rapidly¹.

The structure of the automation process

Automation – is a complex process that requires a well – thought-out approach. There are several possible ways: overall automation – from ordering products to serving the meal, or the automation of the most labor-intensive production processes, leaving the remaining stages of production on manual labor. In any case, suppliers suggest the most appropriate solution. Many software companies offer potential customers the ability to develop custom information systems. Such systems are expensive, because the development process itself is not cheap. But this is the only option that allows the customer to obtain information system

that would completely meet the restaurant's needs and consider its specifics. Figure 1 shows a turn-based automation model, which includes not only technical aspects, but also the processes that must be considered before and after system integration.

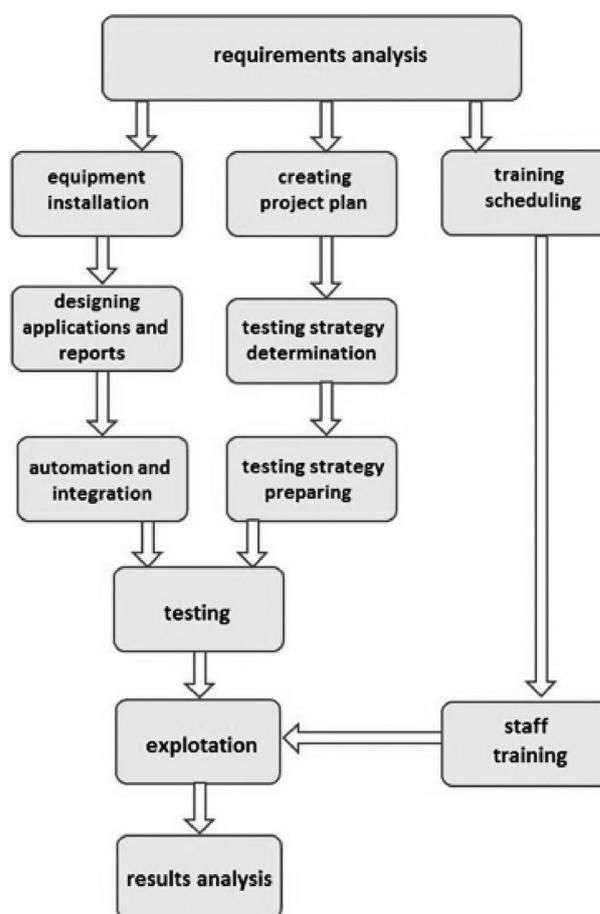


Figure 1. A possible model of automation process

As a result, the time of serving is shortened: there is no need for extra personnel actions; the number of errors, following the order to the kitchen and back, are eliminated. The pervious vanity is replaced by this:

¹ Remizova E.Yu (2011), *Restaurant automation solutions* [Resheniya po avtomatizatsii restorana], unpublished.

1. receiving an order by the waiter (not automated)
2. input the order to the terminal (excludes errors in the orders transmission by chefs or bartenders)
3. automatic printout of the order for the chef on chef's terminal
4. after cooking, the chef changing order's mark, which means the willingness to delivery (refines communication between the kitchen and the trading floor)
5. pre-check automatic generation, which includes a detailed listing of dishes and a list of additional services (such as discounts for regular customers);

The operation of software package is divided into two parts: an outer (front-office) and internal (back-office). The Front-office is designed to facilitate and speed up the work directly with visitors of the restaurant. The result of Front-office automation is reducing the human factor errors and speeding up the work. Automatic printed pre – checks simplify the calculation. Also, the Front-office is developing a system to create an atmosphere in the restaurant: automatic control of the music and lighting, which is important for the classic restaurants and cafes. Back-office automates processes that the client does not need to see. All system director, manager components

are available to the user. This is a "workplace of the", economist, store clerks, managers, administrators, accountants and other office staff.

Restaurant business software is no longer expected to provide only order entry and processing automation and inventory management. A modern restaurateur needs a solution that would help put together and retain an effective, self-motivated team that does not require constant supervision. A perfect system would maintain a consistently high quality of cuisine while ensuring efficient service and attracting new guests. It would minimize the risk of fraud, streamline procurement, and build an effective supplier relationship system while providing timely, accurate and full business information and generating instant reports for shareholders as often as needed. To achieve optimal business performance, depending on restaurant's needs and software characteristics, changes could be made in several or all areas as a complex:

- Customer service
- Staff management
- Finance

Customer service

It is well known that 80% of revenue comes from regular customers, so

there is a direct sense to increase attention towards them.

A robust system for managing guest cards refines discount systems and loyalty programs. It helps to make one-time buyers regular consumers of products and services, provide emotional attachment to company's customers, provides the possibility of conducting marketing researches based on the collected information on its customer (fill in the form of issuing cards)².

Some of software providers offer the ability to create the automatic reports that monitor the effectiveness of the implemented systems loyalty. These reports are based on the statistics that accumulate in the system of particular restaurant. Further guidance will be able to get the analysis of the effectiveness of the system, expressed not only in monetary terms, but also in increasing the number of customers over time. These reports may be presented in tabular form and in graphical form.

Smart restaurant music control system allows to compose a musical program for any period thus enforcing certain music style and diversity. In accordance with days of a week and time of

a day you set up playlist for every room and automatic volume adjustment – neither of these can be changed by your personnel. Also, the software provides reports on track usage thus helping to prevent copyright infringement.

According to statistics, by increasing cross-sales and impulse purchases, the number of restaurants using virtual menu increased to 30%. Customers can make orders themselves with their own mobile device, tablet or laptop or with the terminal set on their table³.

Staff management

The management of any enterprise should provide good working conditions, decent wages, but at the same time strict control over the work of employees. Experts admit the huge losses, incurred by the global restaurant industry due to a lack of control. Automation becomes the solution:

- the restaurateur may specify rate of system access for each role
- reduction of theft and abuse by staff
- automatic calculation of bonuses and penalties

2 "iiko – the best restaurant automation system" ["iiko – luchshaya sistema avtomatizatsii restorana"], available at: <http://horeca-club.kg/articles/view/72>

3 "Restaurant management: new technologies and trends" ["Menedzhment v restorannom biznese: novye tekhnologii i tendentsii"], available at: <http://www.uks.ru>

– creating a schedule, log attendance and timesheets

Annually the industry undergo with \$ 20 billion wastage due to theft of products and cash. Every third employee will steal if he will have the opportunity – they steal money, food and time. The company is losing between 5 and 8% of their gross income due to theft committed by its employees, 35% of bankruptcies are caused by large dining theft, 85% of the missing inventory disappears due to internal theft, 53% hired employees forge something in documents. Every action of waiters remains in system. So automation allows to keep an eye on the cash transactions, payroll operations and their compliance to the orders and shows the best employees and underperformers⁴. Every employee during the working day can view the personal report that displays the salary, fees, bonuses, etc., which can motivate employees to achieve better results.

Automated card of tables allows distributing the current, book upcoming and keeping track of pending orders

4 Tsyro, S. (2010), *How to defeat the restaurant theft. Practical course for owners and managers [Kak pobedit' vorovstvo v restorane. Prakticheskii kurs dlya vladel'tsev i upravlyayushchikh]*, Restorannye vedomosti, Moscow, pp. 28-36.

promptly and correctly, to avoid "double" orders, controlling the loading of dishes. Detailed customer base will enable communication with the customer to track the time or cancel their orders, to inform customers of current promotions and events, to share the information about the preferences of each client, significant dates, the amount of the average check, minimize the loss of income in the "rush hour" at the expense of operational and the optimal allocation of orders, recognition of their most profitable or loyal customers, the ability to track pending orders. The system allows updating the orders quickly and easily in real time and changing the layout of tables.

Finance

The integrated system free up the hidden reserves of the company by reducing costs and increasing profits.

Warehouse automation can intelligently allocate any number of positions, considering their size and weight, and basing on these data efficiently generate a batch of discharge. According to statistics, about 20% of orders in warehouses are processed with errors. With automated warehouse the speed of customer service and delivery of products increases.

The systems include the ability to work from 8 taxes at the same time. Taxes can be calculated for each dish and for each account. Extra charge of catering is charged on retail (purchase) price of products and raw materials without value-added tax at the time of their arrival to the kitchen (can be charged at entry of raw materials into warehouse). In the commercial documents for the production of raw materials receive the specified level of mark-up, the mark-up price, value-added tax rate, the discount price and the cost of raw materials with added tax⁵.

The problems with the payment significantly reduce the authority of a restaurant in the eyes of visitors. Automation system provides the opportunity to pay with different currency and minimizes any mistakes in the calculation of the check.

Economic efficiency of the automation

Nowadays Russian restaurant industry is developing rapidly. The absolute leader on this market in Rostov-on-Don is a restaurant chain called "Rice".

5 Bulatova, M.A., Sedova, I.V. (2007), *Restaurant, café: accounting and taxes* [*Restoran, kafe: uchet i nalogi*], Nalog-Info, Moscow, 272 p.

Opened their first restaurant on early 2006, today they are going to put into operation the 57th one.

Restaurant chain "Rice" shows a strong increase in the level of informatization. In 2008, they began to develop their own software, not on the 1C platform, that allowed them to occupy leading positions in catering for a long time. Although, the department, which was being developing software product and the product itself came on the market of automation and separated from the chain.

The new software got a name "Forint K", coming up with "ERP Service" company support. "Forint: Restaurant" is a special complex of software and equipment required for café, bar, entertainment centers and bistro.

Possibilities:

- implementation of modern marketing and accounting policies
- permanent access to all accurate information about the enterprise
- definition of the duties and responsibilities of each employee, to prevent abuse by staff
- to minimize the human factor in business management
- exclude routine work on accounting inventory balances
- provide flexible management and discount policy

- plan banquets and corporate events
- keep a record of booking tables
- provide analysis and prediction of the performance of the restaurant on many criteria
- monitor the status of the warehouse⁶

At the time of the "Forint K" release, the main task for all restaurants was uninterrupted and reliable operation. But that with the arrival of 2012, the requirements have increased considerably. The current level of restaurant support was not enough. Economic and technological development required the emergence of a system that improves the efficiency and still maintain a sales plan, what is very difficult.

At the same time, the "Rice" chain, grew up significantly since 2008, is trying to select a new ERP system that would be able to reduce costs by taking into consideration all the processes taking place in the enterprise. At first, they tried to use "R-Keeper", then "Astor Restaurant". However, the staff persistently refused to master the complicated system, so the project fell apart as quickly as appeared. In 2012, "Rice" found a good substitution for their previous automation systems. It

⁶ "ERP Service" ["ERP Service"], available at: <http://erp-service.ru>

was a young, but perspective software innovation called "iiko".

The reasons of "iiko" success: functionality, covering all aspects of the restaurant business; constant and regular updates and its reliability are the main reasons for the success of the program. The number of implementations, in comparison with the leaders of the Russian automation market (Figure 2), is quite small, but growing popularity and legit functionality make "iiko" a worthy competitor to the proven leaders.

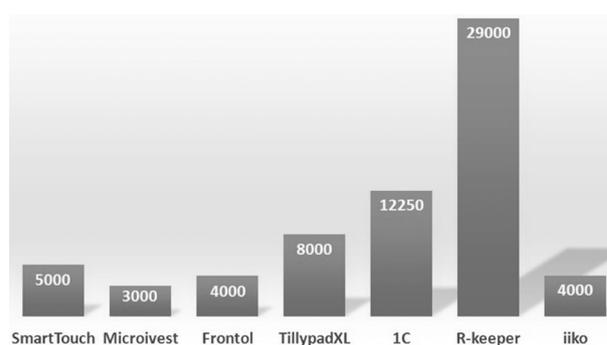


Figure 2. Software developers on the Russian market. Compare of installations

Envisaged data extraction from "R-keeper" and "1C catering" allows users a quick transition to the new automation system "iiko".

Benefits of using "iiko":

- reduce costs
- less staff
- optimize purchases
- eliminate theft

Table 1. Expenditure items in relation to income (\$)

	Before automation		After automation	
Revenue (per month)	32258	100 %	41935	100 %
Cost of products	12903	40 %	10903	26 %
Salary	3225	10 %	839	2 %
Rent	967	3 %	839	2 %
Transport	1612	5 %	1258	3 %
Other expenses	645	2 %	419	1 %
Net profit	12903	40 %	27677	66 %

- control the waste of products
- optimize salary
- reduce the cost of the discount

In accordance with management's instructions on the further development of IT-technologies, "iiko" has become a universal system to automate key business processes and increase sales in all restaurant chain "Rice".

Generally, the effects of software implementation can be divided into two types: economic (measurable) indicators and the so-called qualitative changes, which were discussed previously. Here are some measurable indicators of the effectiveness of implementation of automation system: revenue growth (5-25%), a reduction of working capital in stocks (25-55%), increasing the efficiency of resource use (15-40%), improving customer service levels (25-60%) , cost reduction (5-20%) increase the turnover of funds (25-55%).

In Table 1 we consider the cost items on the delivery service in "Rice", before and after automation through. Revenues increased due to the possibility of

ordering online. Salary and transportation costs are reduced due to the optimal distribution of orders and staff motivation. In addition, reduction of losses during the delivery and preparation reduce the losses.

Conclusions

This article introduced the gist of automation process in Russian restaurant business. By detailed presentation of benefits in different spheres of restaurant operating and an algorithm of system implementation, we indefinite the importance of using modern technologies for increasing profits, attracting customers and motivating staff.

Acknowledgements

This research was inspired by the professors of the "Economical Cybernetics" department, Southern Federal University, that gave the author basic impression about the sphere I'm going to work in – business automation.

References

1. Bulatova, M.A., Sedova, I.V. (2007), *Restaurant, café: accounting and taxes* [*Restoran, kafe: uchet i nalogi*], Nalog-Info, Moscow, 272 p.
2. "ERP Service" ["ERP Service"], available at: <http://erp-service.ru>
3. "Iiko – the best restaurant automation system" ["Iiko – luchshaya sistema avtomatizatsii restorana"], available at: <http://horeca-club.kg/articles/view/72>
4. Remizova E.Yu (2011), *Restaurant automation solutions* [*Resheniya po avtomatizatsii restorana*], unpublished.
5. "Restaurant management: new technologies and trends" ["Menedzhment v restoranom biznese: novye tekhnologii i tendentsii"], available at: <http://www.ucs.ru>
6. Tsyro, S. (2010), *How to defeat the restaurant theft. Practical course for owners and managers* [*Kak pobedit' vorovstvo v restorane. Prakticheskii kurs dlya vladel'tsev i upravlyayushchikh*], Restorannye vedomosti, Moscow, 144 p.

Преимущества автоматизации ресторанного бизнеса

Зинюхина Екатерина Владимировна

Студентка 3 курса кафедры экономической кибернетики,
бакалавриата бизнес-информатики,
Южный Федеральный Университет,
344006, Россия, Роснов-на-Дону, ул. Большая Садовая, 105;
e-mail: kate.zinyuhina@gmail.com

Аннотация

В статье рассматриваются основные цели автоматизации ресторанов, анализ основных конкурентных программных продуктов в России. Приведены реальные данные эффекта автоматизации на базе сети ресторанов Rice.

Ключевые слова

Автоматизация, ресторан, программное обеспечение, преимущества, интегрированная система.

Библиография

1. Булатова М.А., Седова И.В. Ресторан, кафе: учет и налоги. – М.: Налог-Инфо, 2007. – 272 с.
2. Менеджмент в ресторанном бизнесе: новые технологии и тенденции. [Электронный ресурс]. – Режим доступа: <http://www.ucs.ru>
3. Ремизова Е.Ю. Решения по автоматизации ресторана. 2011. – не опубликовано.
4. Цыро С. Как победить воровство в ресторане. Практический курс для владельцев и управляющих. – М.: Ресторанные ведомости, 2010. – 144 с.
5. ERP Service. [Электронный ресурс]. – Режим доступа: <http://erp-service.ru>
6. Iiko – лучшая система автоматизации ресторана. [Электронный ресурс]. – Режим доступа: <http://horeca-club.kg/articles/view/72>