

Analysis And Design Of E-Commerce Website As An Electronic Sales Media

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Abstract. *The study's motivation is the growing prevalence of it e-commerce systems among businesses across all sectors of trade and service provision. With the help of e-commerce, businesses are able to disseminate information to consumers more quickly and expand their marketing's reach, both of which should lead to higher revenue. The open source prestashop application is used in this study to create e-commerce websites due to its robust feature set and the wide availability of its corresponding components for no cost. Cresswell's spiral analysis technique was used for this qualitative decryptive study. Spiral analysis involves four steps: data management; reading and memoing; describing; classification; and interpretation; and depicting and visualizing. Data analysis yields a new system, which is implemented in steps including the creation of e-commerce websites, the design of e-commerce website layouts, the entry of e-commerce website data, and the presentation of the findings.*

Keywords: *E-Commerce, Website, Online Marketing.*

Abstrak. Motivasi studi ini adalah meningkatnya prevalensi sistem e-commerce di kalangan bisnis di semua sektor perdagangan dan penyediaan jasa. Dengan bantuan e-commerce, bisnis dapat menyebarkan informasi kepada konsumen lebih cepat dan memperluas jangkauan pemasaran mereka, yang keduanya akan menghasilkan pendapatan yang lebih tinggi. Aplikasi prestashop open source digunakan dalam penelitian ini untuk membuat situs web e-commerce karena rangkaian fiturnya yang kuat dan ketersediaan komponen yang sesuai secara luas tanpa biaya. Teknik analisis spiral Cresswell digunakan untuk studi deskriptif kualitatif ini. Analisis spiral melibatkan empat langkah: pengelolaan data; membaca dan membuat memo; menggambarkan; klasifikasi; dan interpretasi; dan menggambarkan dan memvisualisasikan. Analisis data menghasilkan sistem baru yang diimplementasikan secara bertahap meliputi pembuatan website e-commerce, perancangan layout website e-commerce, pemasukan data website e-commerce, dan presentasi temuan.

Kata Kunci : E-Commerce, Website, Pemasaran Online.

INTRODUCTION

Many individuals have been inspired by the development of information technology to create new innovations that facilitate access to information. The pace and accuracy of information that used to take a long time can now be received in a matter of seconds, and it is the company's responsibility to provide this information in a way that is readily accepted by consumers. A company can conduct promotions in a variety of methods, including by placing advertisements in print or electronic media, distributing flyers, erecting banners, etc. Such a marketing strategy is extremely expensive and appears monotonous and unappealing. The company's inability to locate a suitable acquirer presents a further obstacle. Similarly, consumers struggle to locate the products they require. This is the reason why the demand for internet services can exceed the promotion of what can be obtained in the real world in order to sell commodity products online.

E-marketing, according to Kotler (2004:74), refers to the online sale of products. E-Marketing is the marketing aspect of E-Commerce; it comprises of a company's efforts to communicate about, promote, and sell goods and services via the Internet. E-Commerce is the distribution, purchase, sale, and marketing of products and services through electronic systems such as the Internet, television, the World Wide Web, and other computer networks (Wikipedia). The E-Commerce system benefits numerous stakeholders, including consumers, producers, and sellers. Using E-Commerce can reduce purchasing time for consumers. In addition, E-Commerce prices are typically lower than in-store prices because the distribution channel from producers to consumers is shorter than with traditional purchasing methods. In addition to being faster, the internet offers nearly all types of goods that are typically sold in complete, so despite the fact that the purchasing process is conducted online, a great deal of pertinent information is obtained for the product being purchased.

Prestashop is a free, open-source application for creating e-commerce websites. Other applications, such as osCommerce, OpenCart, and others, can also be used to create e-commerce websites. The author uses prestashop because, in addition to having complete features and a large number of modules as a free add-on for the e-commerce website that will be created, there are developers from Indonesia and an Indonesian language sub-forum that makes it simpler for users to learn prestashop. The company "CV Adi Wahana Computera" used it to design and develop websites based on these factors. The company "CV Adi Wahana Computer" is a trading corporation that provides diverse hardware and software equipment to a large number of customers within and beyond the city of Kediri. Therefore, it is necessary to develop an information and communication technology in the form of an e-commerce website

and designate it as the final project "E-Commerce Website Analysis and Design as a Medium for Electronic Sales."

Research Purpose

This study's objective is to describe the current sales system, identify extant issues, and implement E-commerce in order to provide solutions for problems encountered. Moreover, to improve service quality, overcome sales problems, deliver effectiveness and efficiency in labor and time, and expand sales to a broader audience.

LITERATURE REVIEW

E-marketing

E-Marketing, also known as online marketing, implies that the traditional marketing rules apply. In addition, eMarketing develops market potentials and strengthens existing business relationships by utilizing the Internet as a communication channel. The well-known AIDA (Attention, Interest, Desire, Action) formula or modified versions of it remain valid: a website must attract attention, arouse interest, generate desire, and motivate sales actions. The objectives of marketing are not novel, but the methods for attaining them are (Meier and Stormer 2009:70) E-marketing is a method of selling via the internet, whereas e-commerce is a shop or stall for selling on the internet, with a sales process, product administration, and inventory control.

E-Commerce

Whitten (2004:21) defines e-commerce as the online purchase and sale of products and services. Electronic commerce or e-commerce is the distribution, purchase, sale, and marketing of products and services using electronic systems such as the internet or television, the world wide web (www), or other computer networks. Electronic commerce may include electronic funds transfers, electronic data exchange, automated inventory management systems, and automated data collection systems.

Purbo and Wahyudi (2000: 2), citing the opinion of David Baum, state that "e-commerce is a dynamic set of technologies, applications, and business processes that connect companies, consumers, and certain communities through electronic transactions and the electronic exchange of goods, services, and information."

Based on this comprehension of the definition of e-commerce, e-commerce is a web-based application that facilitates the process of information transfer and online sales.

E-commerce section

According to Whitten (2004:21), the four fundamental online applications (E-commerce) are as follows:

a. Business to Consumer (B2C)

1. A public location where information is disseminated in general.
2. The service is also of a general nature, so the mechanism can be utilized by numerous individuals.
3. The service is provided only upon request. Consumers take the initiative, and producers must be prepared to respond.

b. Enterprise to Company (B2B)

1. Trading companions who are already acquainted with one another and have an established relationship.
2. The exchange of data is repeated and periodic, using a predetermined data format.
3. One of the perpetrators is not required to wait for the other to send information.
4. The prevalent money paradigm is peer-to-peer, in which processing intelligence can be dispersed among both business actors (Onno W, 2000:5)

c. consumer-to-customer (C2C)

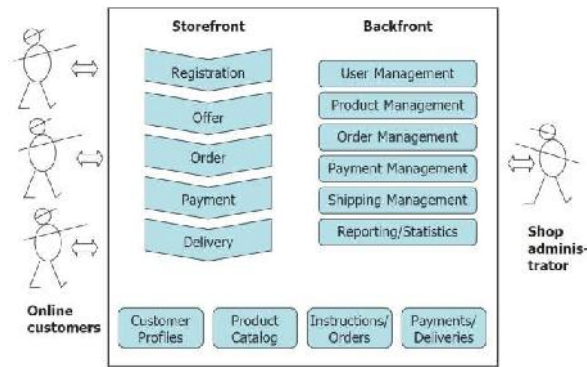
The majority of online marketing is consumer-to-consumer, and communication occurs on the Internet between parties interested in a wide variety of products and topics. In certain circumstances, the Internet is an excellent resource for consumers to purchase or exchange products or information. Other sales sites/forums include Tokobagus.com, FJB kaskus.co.id, FJB Indomwebster.web.id, and others.

d. Business to Consumer (C2B)

The last online marketing channel is business-to-business marketing. Internet makes it simpler for modern consumers to communicate with businesses. Now, the majority of businesses encourage prospects and clients to submit feedback and inquiries via the company's website (Kotler, 2008: 238-241)

E-Commerce module description

Electronic Store/e-commerce (also known as a webshop or online store) is a web-based system that can offer products and services, process and receive orders, as well as manage shipping and payment models. The accompanying diagram provides an overview of how e-commerce operates.



Meier and Stormer, 2009:4 Source.

Figure 1. E-Commerce Module

- Registration, visitors will be able to make purchases and use the provided services, and an account profile will be created.
- Customer profiles, when a client registers, his or her information will be entered into a database and stored there.
- Product Catalog, All product services are listed in a catalog, and everything pertaining to pricing, including discounts and special deals for particular consumers, can be arranged.
- Offering and ordering, offers and purchases can be made that will be processed later.
- Modes of payment, if the consumer is satisfied with the price and terms of delivery, numerous payment options are available.
- Shipment Option, Delivery option to utilize delivery services

RESEARCH METHODS

According to Arikunto (2005: 234), descriptive research is not intended to test hypotheses; rather, it merely describes symptoms, conditions, or facts. While qualitative research is a research method based on postpositivism and used to study natural object conditions, as opposed to experiments in which the researcher is a key instrument, data collection techniques are triangular (combined), data analysis is inductive/qualitative, and the results of qualitative research emphasize meaning rather than generalization (Sugiyono, 2011: 9).

Therefore, it can be concluded that this research employs a qualitative descriptive approach to provide system users with guidance on designing and developing e-commerce websites for marketing expansion. The research was conducted without testing the hypothesis

because the purpose was to describe, document, analyze, and interpret the previous or current working conditions.

Determining the research focus is a crucial step in the research process, as the focus is the initial stage of the initial scope, which is chosen as the general area in the first stage of research implementation, so that the research can obtain a general, global picture of the subject or situation under study (Faisal, 1990: 142). Additionally, the determination of focus is intended to filter incoming data. According to the research's title, the following is the focus of this study:

1. The sales information system at CV Adi Wahana Computer Kediri is described.
2. Web design for e-commerce as an electronic sales medium

Analysis Data Methods

In order for a phenomenon to have social, academic, and scientific value, data analysis entails a succession of study activities, grouping, interpretation, and data verification (Tobroni, 2000: 191) According to the stated research objectives, the goal of utilizing data analysis tools is to simplify data into a form that is simpler to read and interpret.

The stages involved in data analysis are:

1. Analyze sales information systems that are suitable for use in companies using spiral analysis data, termed spiral analysis because the processes of data collection, data analysis, and report writing are interrelated and frequently occur simultaneously in research projects.

The following stages are required (Creswell, 2007: 151):

- a. Data Managing, All the data were organized into file folders and computer files according to the type of the data, for instance, observation field notes, interview transcripts, or document, etc.
- b. Reading and Memoing, sketching ideas in the margin of field note, highlighting certain information in descriptions, writing observers comments, reflective passages, and also summarizing the materials.
- c. Describing, Classifying, and Interpreting, in this process researcher's job is to describe in detail, dimensions through some classification system, and provide an interpretation in light of their own views or perspectives in the literatures.
- d. Representing and Visualizing, creating a visual image of the information.

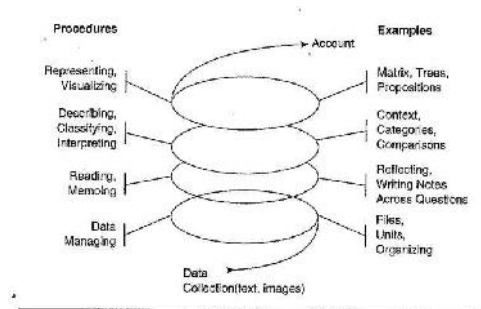


Fig. 2 Spiral Data Analysis

2. Model Design

During this phase, the researcher will design models that will be used to create a web-based promotional information system using the following system modeling tools:

1. Logical Design

- Context diagram
- Data Flow Diagram Levels / Stages (DFD Levelled)
- Flowchart

2. Physical Design (Physical Design)

- Technology Design (Technology Design)

During this phase, the researcher will create a technological design that will be incorporated into the e-commerce website system, which will include computer technology such as hardware, software, users (brainware), and computer and communication network technology

- Web Design

In this phase, the researcher will use the Prestashop application and Macromedia Dreamweaver 8 to modify web content and context.

RESULT AND CONCLUSION

The Data Analysis Spiral

1. Data Managing

There are two main parts to the data management procedure:

- a) Handling material on the web.

Documentation and interviews with executives and the marketing section form the backbone of the website's content management system. The goal of this interview was to collect all of the specifics required to create a website in a comprehensive and exact fashion. Here are some examples of the information gathered:

- Pricing, in order for consumers to make educated purchases, businesses must provide transparent pricing information.
- Quantity Information, amount data which can be used to determine how many of the listed products have been sold or are still in stock.
- Specification Information, details about the product's features and capabilities, so that buyers are fully informed before making a purchase.
- Customer Service Information, Information gathered from customers is used to fill orders and keep lines of communication open, while information gathered from customers is used to improve customer care and make it easier for customers to share feedback, concerns, and questions. Phones (cell, workplace, and Yahoo!) are the most common means of communication.
- Office Location, location details for the Adiwahana Computer workplace are provided via a Google map on this page.
- Purchase details, including a detailed explanation of the various payment options and the financial institutions accepted

b) Web-based Program Construction and Administration

During this phase, all of the necessary information and programs are compiled into one location for easy access during the website-building process.

- Installer for the free and open-source e-commerce platform Prestashop.
- Replaceable content is edited in Macromedia Dreamweaver 8.
- Extra functionality for online stores is provided by the Prestashop extension.
- Xampp, which is based on the Apache web server, incorporates a MySQL database server, and provides support for PHP coders can be used
- Corel Draw is used to make the banner logos and patterns that appear at the very top of a website.

2. Reading and Memoing

The following diagram depicts the current sales information system utilized by the Adiwahana Computer store, as determined by the data gathered and organized.

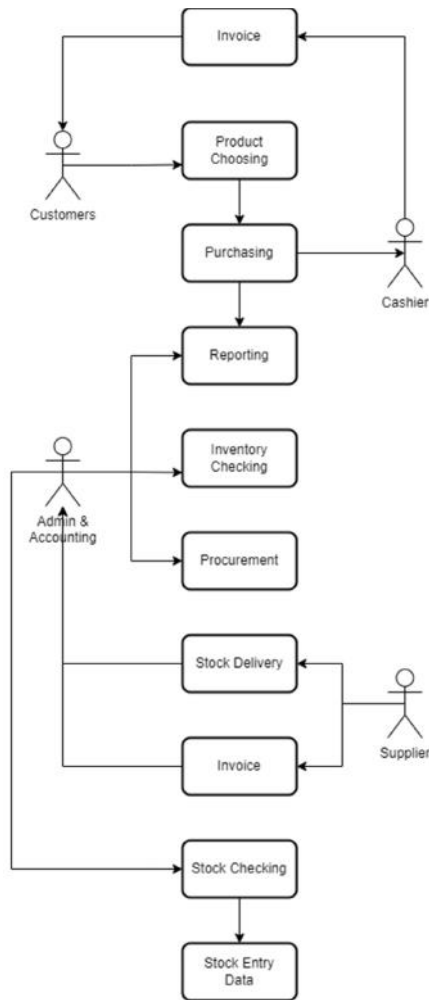


Fig 3: Conventional Selling System

3. Describing, Classifying, Interpreting Describing

In this section, the researcher describes the current sales information system's deficiencies or issues. The disadvantage of the current sales information system is that sales activities are still conducted manually/offline, limiting marketing activities to the Kediri and surrounding areas and delaying the delivery of product information from companies to customers.

4. Classifying

The researcher makes some attempts to categorize the current sales system into its component parts in this segment.

Inputs:

- The cashier feeds information about customer transactions into a database for later use by the accounting division.

- An itemized list of what must be ordered from vendors can be found in the inventory area.
- Items are catalogued in the database after being entered by the inventory section.

Processes:

- In this procedure, the cashier's buy information is recorded
- the company's shopping list is processed by the supplier
- and the inventory is entered into the database.

Outputs:

- sales reports generated by the recording section
- purchase invoices generated by the supplier after the list of goods sent by the supply department has been processed;
- new item list data generated by the inventory department after the list of items recently purchased has been entered and processed in the database.

5. Interpreting

In the interpreting section, input, process, and output are combined, which were previously grouped in the classifying section, to generate a new system that is anticipated to be more effective, efficient, and capable of addressing some of the issues encountered by the old system. The next image depicts the new system:

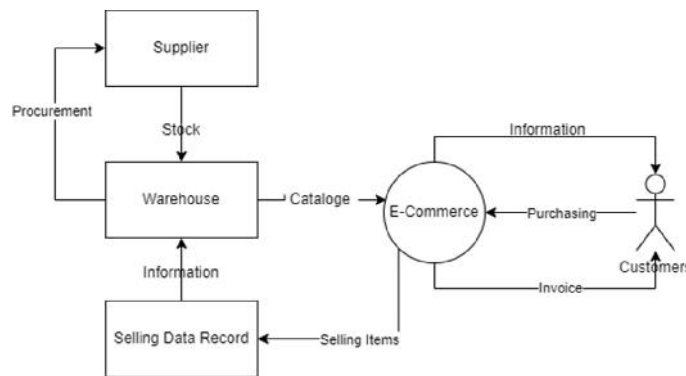


Fig 3: Context Diagram New Systems

6. Representing, Visualizing

At this point, researcher create schematics of the e-commerce website's sales information system, including a bird's-eye view and a sitemap, which is a graphical representation of the structure of an online store. To see the website, See the guide in action below:

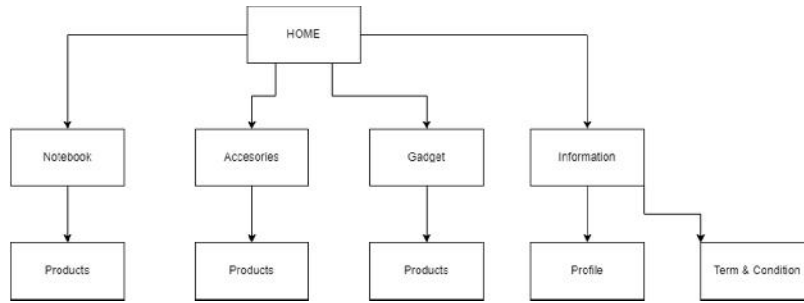


Fig 4 Sitemap

Design Model System

a. Logical Design

A Data Flow Diagram or Data Flow Diagram is utilized to describe the logical design. DFD is frequently used to define existing systems or new systems that will be developed logically without first considering the physical environment in which data flows or is stored. For the first time, DFD will be described at the topmost level or Context Diagram, where the diagram serves as the foundation for this logic system design model.

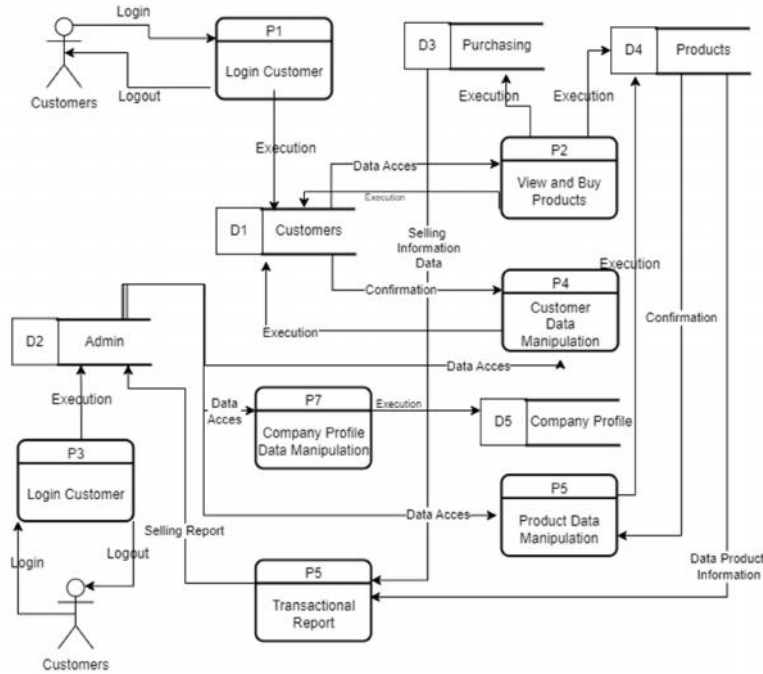


Fig 5: DFD Level 0

b. Physical Design

The physical design represents specific technical aspects, such as information completeness, accessibility, usability, quality, and aesthetic appeal. The physical design can demonstrate how the system can be implemented in the future. The following is the menu for planning and constructing an e-commerce website as an electronic sales medium:

- Developing web

This website is constructed offline, without the use of an internet connection. The tasks involved in creating and designing a website are as follows:

1. Install the XAMPP server, which is used to construct a local server.
2. Create an inactive database that will be linked to the Prestashop installation in the future.
3. Install the prestashop software

- Designing Layouts

The attractiveness of a website depends on its fundamental layout and the incorporation of animation. The tasks that must be performed when designing the layout.

1. Install a template that is then modified to your preference.
2. Create a logo for a banner header using Adobe Photoshop
3. Add animation using the module for slide animation.

- Data Input

The collected web content information is then inserted into the e-commerce website.

1. Enter information on products being sold
2. Enter information about the business
3. Generate shipping data in order to calculate transportation costs

- Module Installation

When creating e-commerce websites, modules are function files that can be added or removed to meet the requirements of web developers. The subsequent modules have been added:

1. The addition of multiple Whatsapp statuses to the reffers chat interface to the Whatsapp.
2. Mandiri payment to expand the use of the Mandiri payment system
3. BCA is integrated with payment as an additional method of bca-based payment.

Technology Design

a. Hardware (software)

This system is built using the PHP and MySQL programming languages, the prestashop application, and the Windows 11 Home operating system.

b. Hardware

The utilized hardware or hardware. In order to implement the planning and development of a website as an electronic sales medium, the researcher offers the following recommendations regarding specifications:

Processor : core i7 *second generation extreme edition*

RAM : 8gb dual

Monitor : SVGA 17”

Keyboard : P/S 2 (110 key)

Mouse : Vtrek

VGA : Atiradeon 5870 *mobile edition*

Differences between the old and new systems presented in a table.

Old System	New System
Customers cannot receive non-stop service 24 hours a day, only from 9:00 am to 5:00 pm.	The system is able to provide consumers with nonstop service 24 hours per day.
Marketing activities are limited to the city of Kediri and its environs.	Marketing activities are possible throughout Indonesia and even internationally.
Customers must visit the store in order to make a purchase.	Consumers can make purchases from anywhere and at any time, so long as they have an internet connection.
Consumers can directly inspect the condition of the merchandise.	Customers can only determine the state of the merchandise from the photographs published to the e-commerce site.
Customer Service can only assist clients who call or visit the store directly.	On the e-commerce website, customers can communicate with customer service via messenger.
Only in the establishment can business be conducted.	Business can be conducted from anywhere and at any time as long as there is an internet connection.
Promotional expenses are high because printing brochures requires a great deal of paper and ink and is unattractive.	Less expensive advertising because you only need to rent a domain and web host, and more appealing with added animation.

CONCLUSION

After analyzing and devising the planning and development of a website as an electronic sales channel for CV Adiwahana Computer, the following conclusions can be drawn:

CV adiwahana Computer has excellent potential as a Computer and Hardware trading company that is trusted to assist the community in providing services. The potential that CV Adiwahana Computer Kediri possesses is:

- a. Many out-of-town consumers visit the Adiwahana Computer Kediri store directly.
- b. Collaborating directly with accer point, Surabaya branch of Astrindo
- c. The availability of facilities to facilitate CV adiwahana Computer activities utilizing computers and internet networks. Some of the company's activities, such as documenting product data and generating customer deposit reports, already utilize computers.
- d. Employ specialists in each – each component

The implementation of e-commerce website analysis and design as an electronic sales medium will increase the effectiveness of sales activities, thereby enhancing CV Adiwahana Computer's reputation in the larger community.

Suggestion

Because the analysis and design of the e-commerce website as an electronic sales medium is only an initial project that will require further development and refinement, improvement is a factor that must be addressed in future system development if a successful system is desired. The following are examples of possible recommendations:

(1) Existing facilities must be further enhanced in light of their current limitations. (2) Employees or specialized personnel (webmasters) are required to correctly manage this system, and the division of labor (job description) must be clear. (3) This system's features and applications must be expanded so that it can provide benefits for businesses and as a community service. (4) System security must be enhanced further as this system evolves in a more professional direction in order to provide accurate data. (5) In order to increase the number of visitors to a website, it is anticipated that the website will be updated on a regular basis so that the information it contains always reflects the most recent developments. It is anticipated that future researchers will be able to create a system that is more commercial because it can generate passive income. In addition to functioning as a publication and promotion instrument, this system can provide passive benefits, such as the placement of advertisements from third parties on this website. (7) Both hardware and software should be subject to scheduled and regular maintenance.

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