

UTS

ADVANCED IS ANALYSIS AND DESIGN KELAS MTI 19A

Dosen Pengasuh

M.Izman Herdiansyah,MM,PhD

Sabtu/17 April 2021

CASE:

'Video Miners' Use Cameras Hidden in Stores to Analyze Who Shops, What They Like
By JOSEPH PEREIRA Staff Reporter of THE WALL STREET JOURNAL

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The research, which involved filming 2,000 shoppers, was "really not invasive," Mr. Kahn says. "Nobody knew they were being recorded and our work didn't interfere with the store environment. Had we tried to interview people, the process would have taken much longer."

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(Write to Joseph Pereira at joe.pereira@wsj.com)

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2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

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Selamat bekerja

Jawaban :

1. Dalam kasus yang ada dapat kita ketahui bahwa adanya kamera sebagai bahan penelitian untuk data pemasaran yang disebut “video mining” mulai dipermasalahkan karena dianggap bahwa melanggar privasi para pembeli karena merekam tanpa sepengetahuan mereka. Namun perusahaan menjamin bahwa kamera tidak merekam secara jelas seperti kamera pengawas.
2. Menurut saya supermarket perlu menggunakan sistem ini, karena untuk dapat mengetahui data pemasaran lebih cepat dibandingkan dengan menunggu data riset pemerintah yang lebih memakan waktu lama. Untuk implikasi strategis perusahaan sebaiknya perusahaan juga mencari metode mining yang lebih cepat dan real time untuk pendataan pemasaran karena perusahaan dapat melakukan peningkatan penjualan dengan cepat. Peluang yang juga menjadi ancaman akan muncul secara bersamaan, peluang jika perusahaan juga menggunakan data mining yang sama akan memungkinkan adanya penaikan penjualan, ancaman yang akan muncul jika kita tidak menerapkan metode yang lebih cepat adalah kemungkinan banyaknya pelanggan yang lebih memilih untuk datang ke penjual yang menggunakan metode penjualan tersebut.

3. Berikut merupakan Cause Effect dengan Fishbone :

Effect	Cause	
Adanya tuntutan pelanggaran Privasi	Man Power <ul style="list-style-type: none">• Kurang adanya pemberitahuan kepada pihak pembeli bahwa terdapat kamera tersembunyi• Pembeli yang tidak terlalu perduli dengan adanya pemberitahuan	Material <ul style="list-style-type: none">• Perlunya kamera yang banyak
	Method <ul style="list-style-type: none">• Posisi kamera yang terlihat	Machine <ul style="list-style-type: none">• Kemungkinan kamera yang jatuh atau terlepas

Dari atas dapat kita ketahui bahwa masalah yang terjadi adalah adanya kamera tersembunyi yang menyebabkan pembeli merasa bahwa hal itu melanggar privasi, masalah ini dapat diselesaikan

dengan memberitahukan sebelumnya kepada pembeli bahwa di dalam toko terdapat kamera tersembunyi dan melakukan pemberitahuan sehingga tidak terdapat kesalahpahaman.

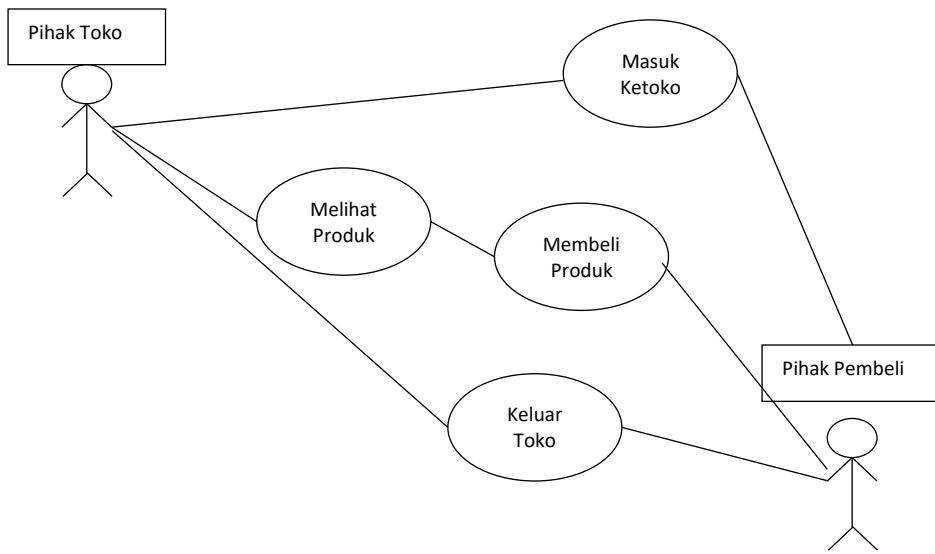
4. Constraints Matrix

Problem or opportunity	Cause and Effects	System Objective	System Constraint
Kamera tersembunyi yang digunakan untuk data riset dianggap sebagai pelanggaran privasi	Karena banyaknya konsumen yang tidak mengetahui bahwa adanya kamera, dan mereka menuntut kepada hukum karena dianggap melanggar privasi	Melakukan pemberitahuan bahwa terdapat kamera tersembunyi di dalam toko sehingga tidak adanya kesalah pahaman	Sudah adanya pemberitahuan, namun beberapa pembeli tidak memperhatikannya

5. Berikut merupakan analisis PICES :

	Problem	Opportunities	Directives
P	Penggunaan yang memerlukan kamera yang cukup banyak sesuai dengan toko yang akan diteliti	Mencari kamera yang lebih baik agar dapat mengurangi banyaknya kamera.	Agar dapat mengurangi kemungkinan kamera dapat mengganggu konsumen.
I	Kemungkinan informasi bocor data pemasaran suatu toko karena menggunakan pihak ke-3	Melakukan pemberitahuan kepada pembeli dari toko bahwa terdapat kamera di dalam toko	Agar tidak terjadinya laporan pelanggaran privasi di kemudian hari.
E	Banyaknya video rekaman yang tersimpan sehingga membutuhkan ruang yang besar pada sistem	Penghapusan data secara berkala setelah data riset dikirimkan kepada pihak klien	Agar dapat mengurangi ruang yang besar sehingga membutuhkan biaya tambahan
C	Banyaknya video yang tersimpan di dalam sistem sehingga harus dihapus	Penghapusan data secara berkala	Mecegah terjadinya error pada sistem
E	Proses data riset dapat dilakukan lebih cepat dari pemerintah	Memproses data riset lebih cepat dari sebelumnya	Agar klien semakin puas dengan kinerja.
S	Kamera tersembunyi	Melakukan pemberitahuan kepada toko yang menyewa jasa untuk melakukan pemberitahuan kepada pembeli mereka.	Agar tidak terjadinya laporan pelanggaran privasi di kemudian hari.

Nama : Hairina Septiani
NIM : 20220060



6.

7. Pada nomor 6 terdapat diagram use case, dari gambar tersebut dapat kita bahwa, pembeli masuk ke dalam toko, setelah pembeli melihat-lihat akan ada 2 proses, pembeli keluar dari toko atau melakukan pembelian. Pada sistem ang dilakukan oleh ShopperTrak, mereka dapat menghitung berapa jumlah pembeli, apa produk yang mereka sukai, dan hal-hal yang berhubungan dengan riset pembelian dari dengan melihat pergerakan yang dilakukan oleh pembeli yang terekam di dalam kamera tersembunyi yang ada dan akan dilakukan secara realtime.

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Researchers were interested in customers' facial expressions and eye movements as they spotted the gift cards, and whether they walked to a display to pick up a card. Kahn cameras, each the size of a golf ball, were hidden behind the displays. The devices were programmed to detect fast-eye movement, smiles and frowns, says Greg Kahn, the company's CEO.

The research, which involved filming 2,000 shoppers, was "really not invasive," Mr. Kahn says. "Nobody knew they were being recorded and our work didn't interfere with the store environment. Had we tried to interview people, the process would have taken much longer."

And had people known they were being taped, he says, "I know many of the shoppers would have stuck their hands in front of the camera lens and refused to be recorded."

A spokeswoman for American Express described the project as a "pilot program ... that's not for public consumption" and declined to comment further.

It isn't clear whether the American public will be as tolerant of secret market research using videotape as they are of security cameras. There are 29 million cameras videotaping people in airports, government buildings, offices, schools, stores and elsewhere, according to one widely cited estimate in the security industry.

(Write to Joseph Pereira at joe.pereira@wsj.com)

Dari kasus diatas:

1. Sebutkan dan jelaskan masalah yang harus diselesaikan.

Jawab :

- trend penerapan video sebagai alat analisis pelanggan
- privasi masyarakat/pembeli
- analisis pelanggan

2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

Jawab :

Perlu untuk mengetahui barang atau jenis produk apa saja yang sering cari dan dibeli oleh komsumen. Sehingga perusahaan harus dapat menganalisa barang yang sering dicari komsumen dan mengingkatkan kualitas barang yang diproduksi. Jika jenis barang yang diproduksi perusahaan sama dengan barang yang diproduksi oleh perusahaan lain, maka harus meningkatkan keunggulan dari barang tersebut agar konsumen dapat memilih produk yang lebih baik.

Ancaman yang muncul yaitu kamera yg tersembunyi dan tidak diketahui oleh pembeli mengakibatkan pembeli akan menganggapnya sebagai pelanggaran privasi.

3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems*, *opportunities*, dan *objectives* dari perlunya proyek pengembangan sistem dilakukan.

<i>Project : penerapan kamera video untuk analisis pelanggan</i>		<i>Last Update by : Intan</i>
<i>Create by : intan</i>		<i>Date Last Updated : 18 April 2021</i>
<i>CAUSE AND EFFECT ANALYSIS</i>		<i>SYSTEM IMPROVEMENT OBJECTIVES</i>
<i>Problem or Opportunity</i>	<i>Causes and Effects</i>	<i>System Objectives</i>
1. Penerapan analisis video kamera untuk mengukur persentase pembeli dan persentase yang hanya melihat-lihat tingkat konversi dengan perbandingan pengunjung dan jumlah transaksi		

Produk Tidak Laku

4. Buat *Constraints Matrix*

<i>Couse and Effect Analysis</i>		<i>System Improvement Objectives</i>	
<i>Problem or Opportunity</i>	<i>Couse and Effects</i>	<i>System Objective</i>	<i>System Constraint</i>

5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi problems, opportunities, dan directives.

A. Performance

- Througput

Sistem Analisis Perilaku konsumen atau jumlah orang yang berbelanja dibandingkan hanya melihat-lihat produk saja dilakukan secara manual oleh pegawai toko.

- Respone Time

Proses pencatatan untuk setiap analisis perilaku konsumen didasarkan pada kuesioner atau melalui transaksi pembelian membutuhkan waktu 10-15 menit, dan waktu antrian antara satu orang dan yang lain membutuhkan waktu 3 menit. Antrian yang panjang dan proses pencatatan yang lama dapat menyebabkan kurang efisien dan terkesan kurang profesional.

B. Information and Data

- Output

Informasi yang dihasilkan dalam kuesioner atau bukti transaksi pembelian tidak sesuai yang di inginkan. Contohnya informasi data kuesioner pembeli akan memberikan data yg tidak sebenarnya karena takut identitasnya diketahui dalam pengisian angket kuesioner begitupun data transaksi pembelian perlu direkap kembali untuk menganalisa datanya.

- Input

Pada sistem lama proses pengolahan data kuesioner menggunakan form yang perlu dilakukan beberapa tahap untuk menganalisaanya begitupun transaksi pembelian hanya diinput di mesin kasir. Hal ini dapat memberikan informasi yang kurang akurat karena kesalan dalam penulisan. Sehingga informasi bisa menyesatkan penerima informasi.

- Stored Data

Penyimpanan data seperti form kuesioner atau bukti transaksi pembelian disimpan tidak terintegrasi dan data tidak fleksibel untuk pemenuhan informasi data baru

C. Economics

Costs

Banyak memakan biaya karna tidak terintegrasi data perlu pemindahan data dulu dalam menganalisa data dan perangkat yang digunakan berbeda beda.

D. Control

Tidak adanya pembatasan hak akses terhadap informasi yang ada. Lemari penyimpanan berkas dikunci dengan gembok kecil saja, sehingga orang lain dengan mudah membongkar dan mengakses informasi.

E. Efficiency

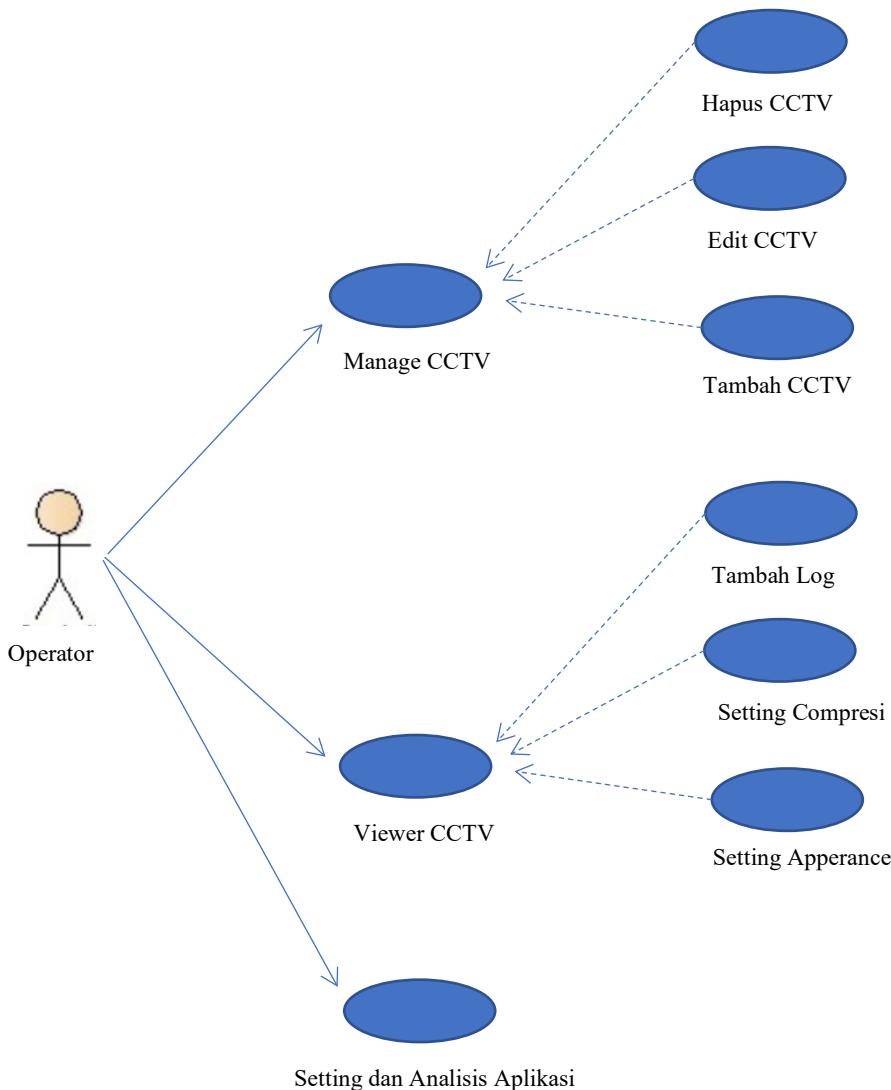
Penggunaan kertas yang digunakan sebagai data atau dokumen terlalu banyak menyebabkan dokumen tertumpuk dan tidak tersusun rapi. Sehingga membutuhkan waktu yang lama agar dapat menemukan satu laporan atau pembukuan yang ingin dicari.

F. Service

Berdasarkan hasil pengamatan Analis Perilaku Pelanggan atau jumlah orang yang berbelanja memakan waktu lama dan kurang efisien, disebabkan karena data diambil dari kuesioner atau transaksi pembelian tidak secara otomatis melalui vidio yang direkam.

6. Susun dan gambarkan diagram *Use-Case Model*.

Diagram Usecase Analisis Perilaku Pembeli atau Jumlah Orang yang Berbelanja dengan Vidio CCTV



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.

Jawab :

Selamat bekerja

1. Sebutkan dan jelaskan masalah yang harus diselesaikan.

Jawaban:

- ShooperTrak adalah pemimpin dalam “penambangan video” yang meningkat selera untuk lebih banyak data belanja real time, perusahaan khawatir pembeli akan menganggap sebagai pelanggaran privasi.
- Perusahaan rintisan Dr. Sharma, Advanced Interfaces Inc, perusahaan kartu kredit yang tidak tahu apakah memanfaatkan pengetahuannya sendiri.
- Kahn Research Group yang tertarik dengan ekspresi wajah dan gerakan mata pelanggan.
- Publik Amerika akankah bersikap toleran terhadap riset pasar rahasia menggunakan rekaman video?

2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

Jawaban:

Jika ditanya perlu, tentu supermarket memerlukannya, karena video miners juga sangat membantu dalam hal-hal yang kadang tidak terjangkau mata, seperti keamanan.

Implikasi strategis yang akan didapat mungkin bisa berupa demonya penelitian yang dilakukan karena mengganggu privasi setiap orang atau akan ada terciptanya undang-undang lebih ketat mengenai video miners tersebut.

Bukan hal yang tidak mungkin peluang yang didapatkan berupa hal-hal besar bagi perusahaan, dan tidak menutup kemungkinan bahwa hak izin yang tidak diberlakukan menjadi percobaan akan menjadi ancaman bagi perusahaan, atau bisa seperti bentuk implikasi yang sudah dijelaskan.

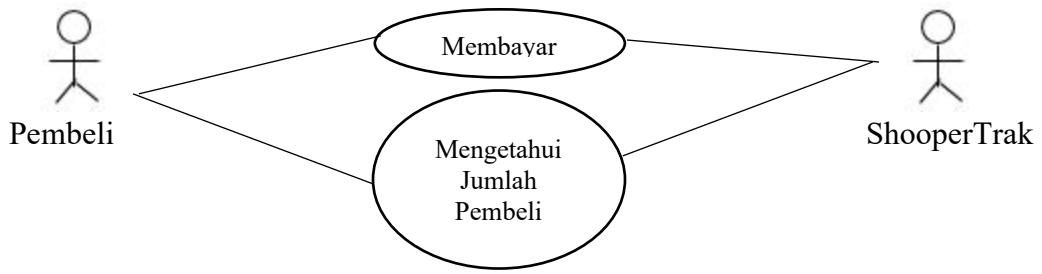
3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems*, *opportunities*, dan *objectives* dari perlunya proyek pengembangan sistem dilakukan.
4. Buat *Constraints Matrix*
5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi *problems*, *opportunities*, dan *directives*.

Jawaban:

- *Performance*: komputer hanya membutuhkan beberapa hari untuk menyaring 64 jam tape dan kamera penelitian kurang invasif daripada kamera keamanan, karena subjek tidak diteliti sedekat tersangka keamanan.
- *Information*: terlalu banyak informasi
- *Economy*: bisa dibilang mungkin biaya yang digunakan besar
- *Control*: kejahatan terhadap data, pelanggaran etika data atau informasi
- *Eficiency*: data dan informasi berlebihan
- *Services*: layanan pada video miners kurang bisa dipercaya privasinya

6. Susun dan gambarkan diagram *Use-Case Model*.

Jawaban:



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.

UTS

ADVANCED IS ANALYSIS AND DESIGN KELAS MTI 19A

Dosen Pengasuh

M.Izman Herdiansyah,MM,PhD

Sabtu/17 April 2021

CASE:

'Video Miners' Use Cameras Hidden in Stores to Analyze Who Shops, What They Like
By JOSEPH PEREIRA Staff Reporter of THE WALL STREET JOURNAL

BRAINTREE, Mass. -- Stepping into a Gap store at the South Shore Shopping Plaza on a recent evening, Laura Munro became a research statistic. Twelve feet above her, a device resembling a smoke detector, mounted on the ceiling and equipped with a hidden camera, took a picture of her head and shoulders.

The image was fed to a computer and shipped to a database in Chicago, where ShopperTrak RCT Corp., a consumer research firm, keeps count of shoppers nationwide using 40,000 cameras placed in stores and malls.

ShopperTrak, whose profile has risen this holiday season as appetite grows for more real-time shopping data, is a leader in "video mining" -- an emerging field in marketing research enabled by technology that can analyze video images without relying on human eyes.

ShopperTrak says it doesn't take pictures of faces. The company worries that shoppers would perceive that as an invasion of privacy. But nearly all of its videotaping is done without the knowledge of the people being taped.

"I didn't even know there was a camera up there," says Ms. Munro, a public-transit manager who popped into the mall on her way home from work to find a gift for her 12-year-old daughter.

Using proprietary software to gauge the size of the images of people, a ShopperTrak computer determined that Ms. Munro was an adult, not a child, and thus a bona fide shopper. Weeding out youngsters is critical in accurately calculating one of the valuable bits of data ShopperTrak sells -- the percentage of shoppers that buys and the percentage that only browses. It arrives at this data, including the so-called conversion rate, by comparing the number of people taped entering the store with the number of transactions.

Ms. Munro's visit was tallied up twice: once as a visitor to the Gap and once in a national count of shoppers. Gap Inc., of San Francisco, pays ShopperTrak for the tally of Gap shoppers. ShopperTrak sells the broader data -- gleaned from 130 retail clients and 380 malls -- to economists, bankers and retailers.

ShopperTrak takes into account how much shoppers spend, data that it gets from credit-card companies and banks, and extrapolates outward to the entire retail landscape. "We can get sales and traffic figures that are identical to the government's, two months before they can issue their report," says Bill Martin, ShopperTrak's founder and president.

Of the millions of shoppers videotaped daily in the U.S., many are aware that security cameras are watching to detect shoplifting. In some cases, stores post signs to disclose such monitoring. But there is far less awareness by consumers that they are being filmed for market research.

ShopperTrak discloses its clients -- a list that includes Gap and its Banana Republic unit; Limited Brands Inc., of Columbus, Ohio, and its Victoria's Secret chain; Payless Shoe Source Inc., of Topeka, Kan; American Eagle Outfitters Inc., of Warrendale, Pa.; and Children's Place Retail Stores Inc., of Secaucus, N.J.

Several other research companies that videotape shoppers say they sign agreements with clients in which they pledge not to disclose their names. They say their clients want the taping to be secret -- and worry shoppers would feel alienated or complain of privacy invasion if they knew.

Katherine Albrecht, founder and director of Caspian, a Cambridge, Mass., consumer-advocacy group, says consumers have "no idea such things as video tracking are going on" and should be informed. When she tells them about such activities, she says the response she often hears is, "Isn't this illegal, like stalking? Shouldn't there be a law against it?" There aren't any state laws forbidding retailers from videotaping shoppers for research -- although in New Jersey last week, Caesars Atlantic City Hotel Casino was fined \$80,000 for videotaping the breasts and legs of female employees and customers with cameras intended for security.

Some research companies' cameras, with lenses as small as a quarter, can provide data on everything from the density of shopping traffic in an aisle to the reactions of a shopper gazing at the latest plasma TV set. The cash register is a popular spot for cameras, too. But cameras can be found in banks, fast-food outlets and hotel lobbies (but not guest rooms).

Video miners say their research cameras are less invasive than security cameras, because their subjects aren't scrutinized

as closely as security suspects. Images, they say, are destroyed when the research is done.

Robert Bulmash, founder of the Private Citizen Inc., of Naperville, Ill., which advocates for privacy rights, says that being in a retailer's store doesn't give a retailer "the right to treat me like a guinea pig." He says he wonders about assurances that images are destroyed, since there isn't any way to verify such claims. The pictures "could be saved somewhere in that vast digital universe and some day come back to haunt us," he says.

Already, video images can be subpoenaed from retailers for law-enforcement purposes. Technology capable of matching a photo with an individual's identity, say from credit-card transactions, "has certainly arrived," says Rajeev Sharma, a Penn State University computer science professor who has launched a company that is creating shopper-monitoring systems. It isn't certain whether retailers are availing themselves of the know-how. Credit card companies currently aren't sharing individuals' financial information with retailers, he adds, but retailers have their own customer databases as the result of loyalty cards, store credit cards and other in-house programs. Theoretically, they could link a transaction at a cash register with the face of a shopper appearing on the videotape.

Dr. Sharma's start-up, Advanced Interfaces Inc., of State College, Pa., is expected this week to launch a Web site, videomining.com, highlighting the company's patented "computer vision" technologies.

In a pilot project conducted last year in the Philadelphia area, Advanced Interfaces set up nine cameras in each of two McDonald's Corp. restaurants to find out which consumer types would find a new salad item most appealing. The research was done without consumers' knowledge, says Dr. Sharma, who is Advanced Interfaces' chief executive.

Seven of the cameras were already in place for security purposes and needed only to be reconfigured using Advanced's sensors. Two additional cameras were positioned in the ceiling directly over cash registers. By measuring the shapes of people's faces, the sensors were able to provide a breakdown of the fast-food customers by race, gender and age group, he says. The videos also revealed the length of time customers spent waiting in line or looking at the menu before ordering. Mr. Sharma declined to discuss the findings.

All of the video was subsequently destroyed, he says. "Only the computers and no humans saw the pictures of the customers," Mr. Sharma says. Advanced is conducting similar consumer-behavior analysis this holiday season for three other retailers that Mr. Sharma declined to identify.

Video mining is being spurred by digital video cameras. Unlike their analog counterparts, digital video cameras can be programmed so that the images can be quickly read by computers -- taking only hours to complete tasks that might have taken weeks for humans to do.

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And had people known they were being taped, he says, "I know many of the shoppers would have stuck their hands in front of the camera lens and refused to be recorded."

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Dari kasus diatas:

1. Sebutkan dan jelaskan masalah yang harus diselesaikan.
2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems, opportunities*, dan *objectives* dari perlunya proyek pengembangan sistem dilakukan.
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6. Susun dan gambarkan diagram *Use-Case Model*.
7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.

Selamat bekerja

Jawaban UTS Advanced is Analysis and Design
M. Ardi Wiratama Putra

1. Sebutkan dan jelaskan masalah yang harus diselesaikan.

Masalah yang ada adalah pelanggan atau customer dari toko retail merasa bahwa hak privasi mereka dilanggar karena toko retail mengambil video (video miners) para customer tanpa sepengetahuan mereka. Yang dimana video tersebut dijadikan sebuah data input untuk analisis pasar lebih lanjut.

2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

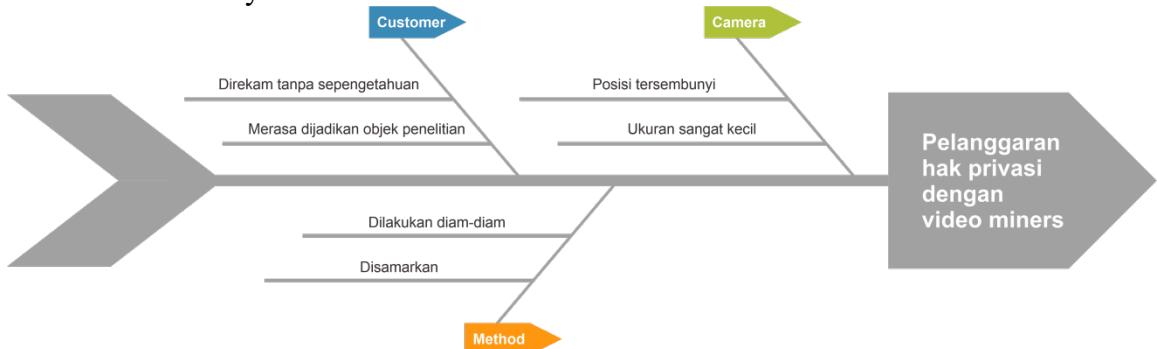
Menurut saya supermarket tidak harus menggunakan video miners seperti pesaing namun video miners dibutuhkan untuk melakukan analisis pasar lebih lanjut.

Dengan adanya teknologi video miners dari sisi pesaing, perusahaan menjadi lebih lamban dalam analisa pasar, dengan analisa pasar tersebut pesaing dapat menentukan strategi-strategi bisnis yang lebih efektif terhadap customer dan membuat perusahaan kita tertinggal dari perusahaan pesaing.

Dari sisi peluang customer yang merasa hak privasi mereka dilanggar akan merasa lebih nyaman berbelanja di toko retail yang tidak menerapkan teknologi video miners ini merupakan keuntungan bagi perusahaan yang tidak menerapkan video miners sedangkan ancaman yang muncul jika customer merasa video miners merupakan suatu hal yang lumrah dilakukan oleh sebuah perusahaan untuk melakukan analisis pasar maka perusahaan yang tidak menerapkan teknologi video miners akan tertinggal.

3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems*, *opportunities*, dan *objectives* dari perlunya proyek pengembangan sistem dilakukan.

Cause-Effect Analysis



Problems: Pelanggaran hak privasi terhadap customer dengan video miners

Opportunities: Sistem dengan fungsionalitas yang sama namun tidak melanggar privasi

Objectives: Membuat sistem yang lebih membuat nyaman customer, menempatkan kamera ditempat yang terlihat oleh customer sehingga tidak merasa diawasi

4. Buat *Constraints Matrix*

Cause and Effect Analysis		System Improvement Objectives	
Problem or Opportunity	Cause and Effects	System Objectives	System Constraint
Pelanggaran hak privasi customer dengan video miners.	Membuat customer merasa hak privasi mereka dilanggar dan dijadikan sebagai objek penelitian sehingga membuat customer tidak nyaman untuk berbelanja.	Membuat sistem dengan fungsionalitas yang sama namun tidak melanggar privasi.	Mengubah sistem yang melanggar privasi.

5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi problems, opportunities, dan directives.

P (Performance)

Pada sistem lama hasil yang dikeluarkan cukup bagus namun memiliki response time yang memakan waktu cukup lama.

Pada sistem baru response time dioptimalkan dengan cepat dan hasil dimaksimalkan dengan lebih baik sehingga video yang di mining dapat dengan cepat dihapus karena hasil analisa yang lebih cepat.

I (Information)

Pada sistem lama informasi yang disajikan membutuhkan waktu lama karena response time dari database memerlukan proses yang sulit.

Pada sistem baru karena sistem dioptimalkan maka yang menjadi input didatabase hanya data hasil analisisnya saja data video hasil video mining tidak menjadi input karena pada sistem baru analisis video dilakukan secara realtime sehingga output informasi lebih mudah dihasilkan dari database yang memang berisi informasi hasil analisis.

E (Economics)

Pada sistem lama cost lebih murah dari sisi hardware namun cukup mahal dari sisi database karena memerlukan ruang penyimpanan yang besar untuk menyimpan video hasil video miners.

Pada sistem baru cost lebih besar dari sisi hardware karena memerlukan komputer dengan spesifikasi yang cukup tinggi untuk melakukan analisis video secara realtime namun cost jauh lebih rendah disisi database karena yang disimpan hanya hasil analisis dari video saja.

C (Control)

Pada sistem lama dari segi keamanan sistem memiliki kerentanan karena sistem menjadi lemah saat sistem sedang melakukan analisis terhadap video yang disimpan pada database yang membuat koneksi kedatabase terus terbuka dan ini sangat berbahaya.

Pada sistem baru yang disimpan pada database merupakan hasil analisisnya saja maka tidak perlu sering melakukan koneksi ke database yang membuat sistem ini lebih aman.

E (Efficiency)

Pada sistem lama pengguna cukup kesulitan mengakses hasil dari analisis video karena analisis baru dijalankan saat pengguna ingin melihatnya, hal ini juga membuat database server menanggung beban kerja yang sangat berat karena harus melakukan analisis, pengambilan data dari database video, dan menampilkan hasil kepada pengguna.

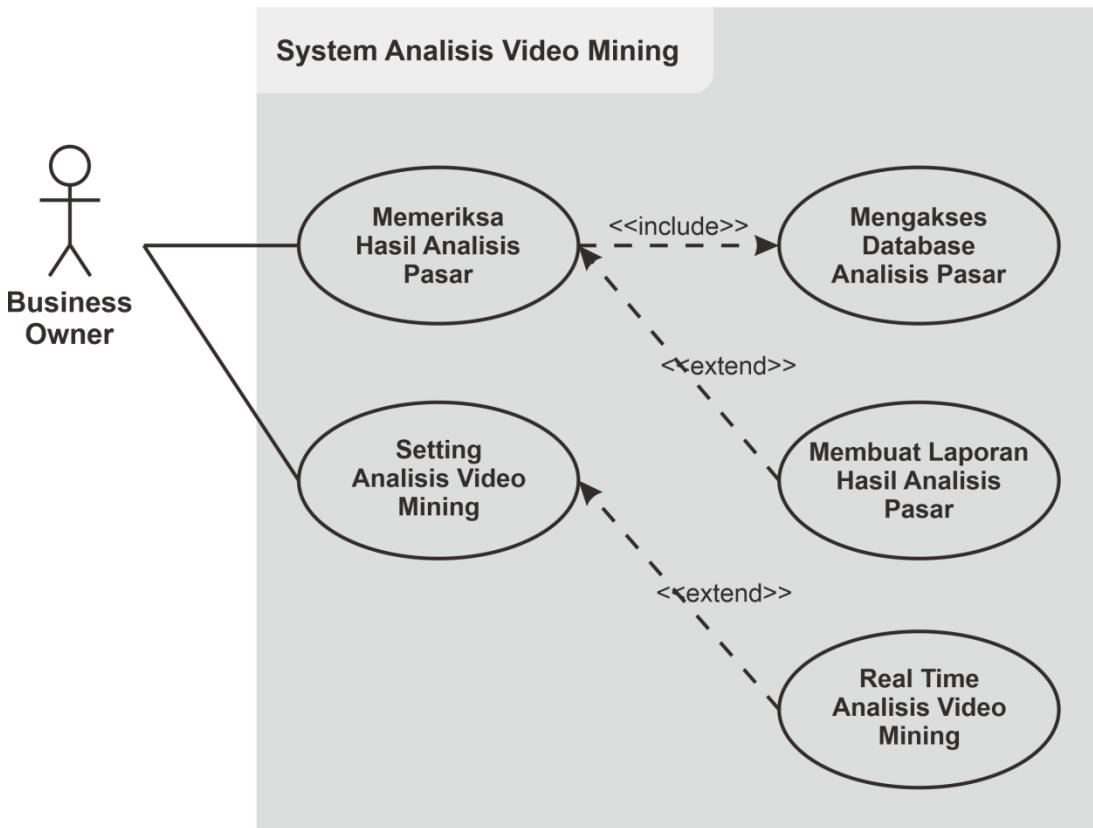
Pada sistem baru pengguna lebih cepat dalam mendapatkan hasil analisis pasar kedepannya namun mesin yang mengolah video terus berjalan karena dilakukan secara realtime namun database server tidak menanggung beban yang sangat berat.

S (Service)

Pada sistem lama layanan yang diberikan sistem sudah cukup baik dan lengkap namun tidak efisien.

Pada sistem baru layanan yang diberikan sistem sudah lebih baik karena sistem sudah bekerja dengan efisien.

6. Susun dan gambarkan diagram *Use-Case Model*.



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.

Nama Use Case:	Memeriksa Hasil Analisis Pasar		
Aktor:	Business Owner dan Sistem		
Deskripsi	Business owner ingin memeriksa hasil analisis pasar dari video minning.		
Normal Course:	Business Owner	Sistem	
	1. Business owner menekan tombol periksa hasil analisis pasar. 4. Business owner mengeksport atau membuat laporan hasil analisis pasar.	2. Sistem mengakses database analisis pasar yang diminta business owner. 3. Sistem menampilkan hasil analisis pasar yang diminta business owner. 5. Sistem mengeksport dan menampilkan hasil eksport kepada business owner.	

Alternate Course:	Business Owner	Sistem
-	-	-
Pre-Condition:	Business owner masuk ke dashboard sistem	
Post-Condition:	Business owner keluar dari dashboard sistem	
Assumption:	-	

Nama Use Case:	Setting Analisis Video Mining	
Aktor:	Business Owner dan Sistem	
Deskripsi	Business owner ingin melakukan pengaturan terhadap analisis video mining.	
Normal Course:	Business Owner	Sistem
	1. Business owner menekan tombol pengaturan analisis video mining. 3. Business owner melakukan pengaturan terhadap variabel-variabel yang ada dalam analisis video mining. 4. Business owner menyelesaikan pengaturan dengan menekan simpan pengaturan.	2. Sistem menampilkan menu pengaturan untuk analisis video mining. 5. Sistem menampilkan pengaturan berhasil disimpan.
Alternate Course:	Business Owner	Sistem
	-	-
Pre-Condition:	Business owner masuk ke dashboard sistem	
Post-Condition:	Business owner keluar dari dashboard sistem	
Assumption:	Sistem terus melakukan analisis video mining secara realtime.	

NAMA : M. ASHARDIANSYAH PUTRA

KELAS : MTIB

NIM : 202420059

UTS

UTS

ADVANCED IS ANALYSIS AND DESIGN

KELAS MTI 19A

Dosen Pengasuh

M.Izman Herdiansyah,MM,PhD

Sabtu/17 April 2021

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Using proprietary software to gauge the size of the images of people, a ShopperTrak computer determined that Ms. Munro was an adult, not a child, and thus a bona fide shopper. Weeding out youngsters is critical in accurately calculating one of the valuable bits of data ShopperTrak sells -- the percentage of shoppers that buys and the percentage that only browses. It arrives at this data, including the so-called conversion rate, by comparing the number of people taped entering the store with the number of transactions.

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Of the millions of shoppers videotaped daily in the U.S., many are aware that security cameras are watching to detect shoplifting. In some cases, stores post signs to disclose such monitoring. But there is far less awareness by consumers that they are being filmed for market research.

ShopperTrak discloses its clients -- a list that includes Gap and its Banana Republic unit; Limited Brands Inc., of Columbus, Ohio, and its Victoria's Secret chain; Payless Shoe Source Inc., of Topeka, Kan; American Eagle Outfitters Inc., of Warrendale, Pa.; and Children's Place Retail Stores Inc., of Secaucus, N.J.

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Katherine Albrecht, founder and director of Caspian, a Cambridge, Mass., consumer-advocacy group, says consumers have "no idea such things as video tracking are going on" and should be informed. When she tells them about such activities, she says the response she often hears is, "Isn't this illegal, like stalking? Shouldn't there be a law against it?" There aren't any state laws forbidding retailers from videotaping shoppers for research -- although in New Jersey last week, Caesars Atlantic City Hotel Casino was fined \$80,000 for videotaping the breasts and legs of female employees and customers with cameras intended for security.

Some research companies' cameras, with lenses as small as a quarter, can provide data on everything from the density of shopping traffic in an aisle to the reactions of a shopper gazing at the latest plasma TV set. The cash register is a popular spot for cameras, too. But cameras can be found in banks, fast-food outlets and hotel lobbies (but not guest rooms).

Video miners say their research cameras are less invasive than security cameras, because their subjects aren't scrutinized as closely as security suspects. Images, they say, are destroyed when the research is done.

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1. Sebutkan dan jelaskan masalah yang harus diselesaikan.
2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?
3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems, opportunities, and objectives* dari perlunya proyek pengembangan sistem dilakukan.
4. Buat *Constraints Matrix*
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Jawaban

1. Permasalahannya adalah banyak orang yang tidak menyetujui perekaman secara ilegal, yang merekam pegerakan mereka tanpa izin, yang mefungsikan Kamera utk pemasaran , Masalah inilah yg harus di selesikak, membuka mata publik bahwa CCTV atau kemera pengintai Memiliki beberapa fungsi seperti pengamanan dan Data pembeli sebagai infomarsi pemasaran
2. Hampir seluruh supermarket menurut saya harus menggunakan video miners untuk melihat respon pembeli dalam memilih beberapa produk di supermarket, bagaimana dia mencari produk tersebut dan seberapa menarik produk tersebut. Untuk di zaman sekarang tidak ada akibat dalam penggunaan video miners atau Kamera malah sebaliknya menguntungkan bagi pembeli apabila terdapat penodongan atau penambretan di suatu daerah khususnya di indonesia.
3. Berikut Cause And Effect Analysis Beserta Constraints Matrix Nomor
- 4.

Cause And Effect Analysis		System Improvement Objectives	
Problem Or Opportunity	Cause And Effects	System Objectives	System Constraint
Tidak Banyak orang menyukai dirinya di rekam secara ilegal, dianggap sebagai penyalahgunaan privasi	Kebanyakan orang akan pindah dari toko tersebut ke toko yang lain	Kamera akan mencatat jika terjadi kriminal di toko tersebut	Toko menjadi aman, kehilangan atau sebagainya akan berkurang

5. **Performance** : kerja mesin cepat dan menghemat waktu yang tidak bisa manusia lakukan dengan cepat contoh Video mining is being spurred by digital video cameras. Unlike their analog counterparts, digital video cameras can be programmed so that the images can be

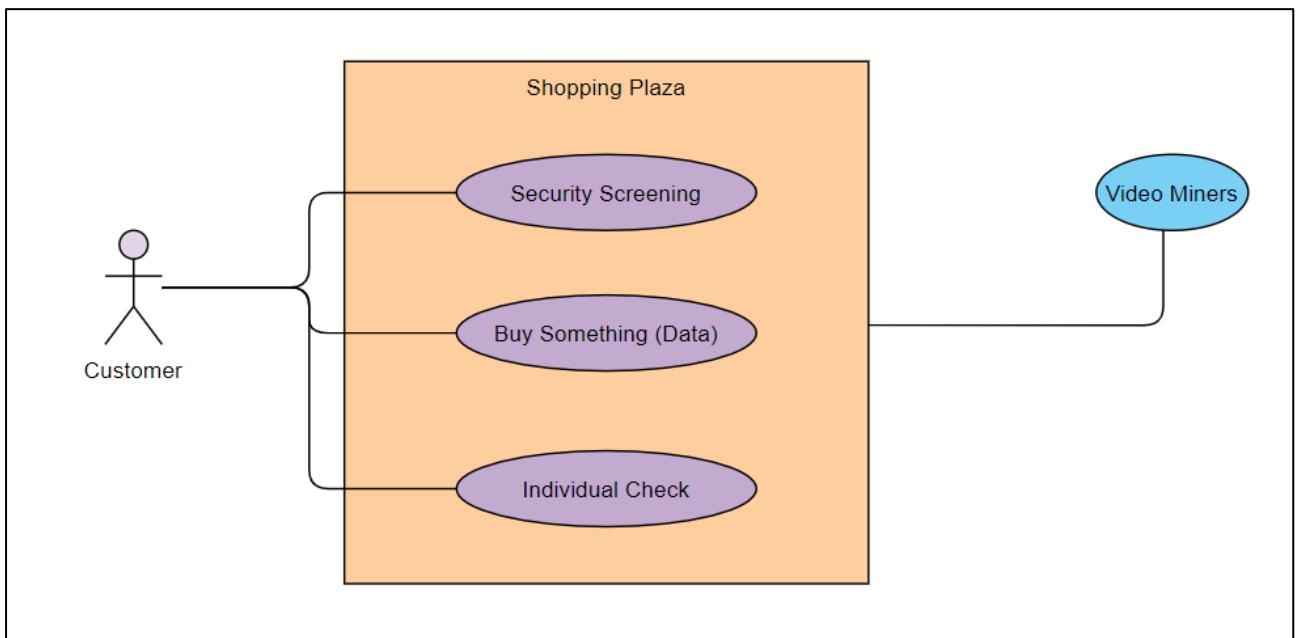
quickly read by computers -- taking only hours to complete tasks that might have taken weeks for humans to do.

Information : mampu memberikan rincian pelanggan makanan cepat saji berdasarkan ras, jenis kelamin, dan kelompok usia, katanya contoh di paragraph "All of the video was subsequently destroyed, he says. "Only the computers and no humans saw the pictures of the customers," Mr. Sharma says."

Economy : Mengurangi biaya pengamanan dan memajukan dalam analisa pasar yang bisa menaikkan omset hanya dengan menganalisa pembeli melalui kamera

Efficiency : Sebuah teknologi yang dapat menganalisis gambar video tanpa bergantung pada mata manusia.

Service : Sistem yang berjalan yang tidak perlu menggunakan banyak tenaga dan menyimpan ke database sehingga beberapa rekaman sebelumnya masih ada yang bisa di teliti atau mencari data tindak kriminal



- 6.
7. **Customer**, membeli sebuah produk ataupun memilih yang ingin ia beli, **Shopping plaza**, memiliki keamanan melalui video miners sehingga gerak gerik orang yang mencurigakan dapat di tangkap oleh video miners untuk mengamankan atau menyelamatkan customer maupun toko
Buy Something, Setelah customer memesan sesuatu maka data yang di dapat dari pesanan tersebut adalah sebuah informasi yang sangat berguna utk product knowledge shopping plaza, apa yang di inginkan costumer mereka
Individual check, meliputi penangkapan wajah, gerak gerik customer dalam menunggu antrian atau pun dalam memesan sesuatu sehingga dapat menjadi sebuah informasi bagi shopping plaza, dan juga sebagai individual check dalam keamanan seperti mengetahui ciri sang pelaku (pakaian seperti apa yang ia pakai, dan seberapa besar ukuran tubuh pelaku)/

UTS

ADVANCED IS ANALYSIS AND DESIGN KELAS MTI 19A

Dosen Pengasuh

M.Izman Herdiansyah,MM,PhD

Sabtu/17 April 2021

CASE:

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Bagaimana pengembangan sistem video mining pada supermarket untuk menganalisa perilaku konsumen/pembeli untuk meningkatkan penjualan.
Analisa berupa pola pembelian produk untuk memberikan gambaran keterkaitan antar barang dengan menganalisis data transaksi penjualan berdasarkan pola berupa produk barang yang sering dibeli
2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

Perlu karena dengan adanya video mining, data yang mining dapat diolah untuk mengetahui perilaku konsumen

Peluang :

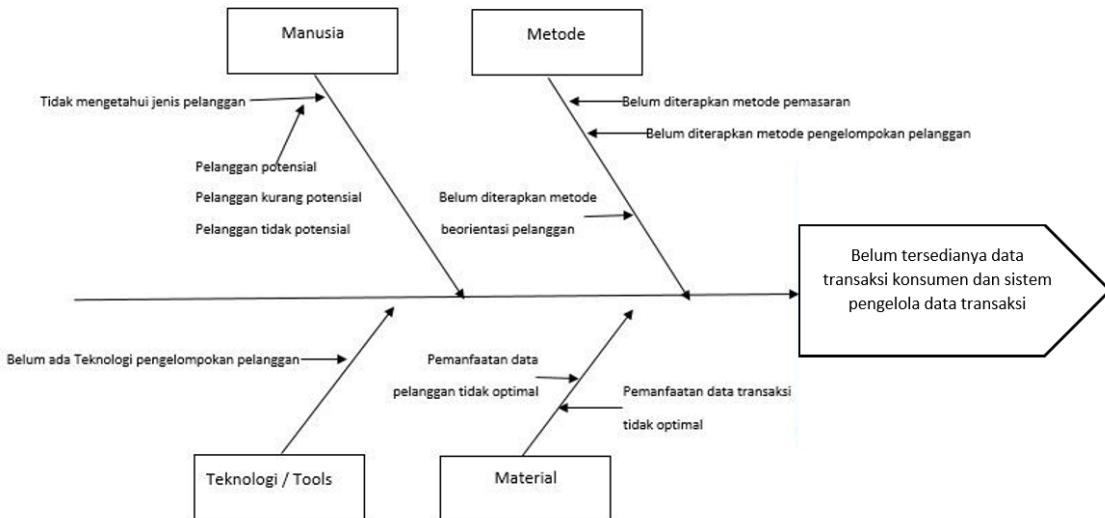
Dapat mengetahui perilaku konsumen. pengolahan data transaksi pembelian barang dari setiap konsumen, kemudian dicari hubungan antar barang-barang yang dibeli sehingga informasi ini dapat memberikan pertimbangan tambahan bagi pimpinan supermarket dalam pengambilan keputusan guna pengaturan barang pada rak, penambahan/pemesanan stok barang.

Selain itu dapat mempercepat proses pengumpulan data, jika dengan metode wawancara, prosesnya akan memakan waktu lebih lama, dan belum tentu konsumen mau diwawancara

Ancaman :

Konsumen akan menganggap video mining sebagai pelanggaran privasi yang bisa menyebabkan ketidaknyamanan konsumen

3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems, opportunities, and objectives* dari perlunya proyek pengembangan sistem dilakukan.



Problems

Belum diterapkan metode pemasaran dan pengelompokan konsumen.

Belum ada teknologi pengelompokan konsumen

Belum diterapkan pemanfaatan data konsumen dan transaksi

Opportunities

Kemudahan konsumen menemukan barang yang akan dibeli

Objectives

mengembangkan sistem video mining pada supermarket untuk menganalisa perilaku konsumen/pembeli untuk meningkatkan penjualan

4. Buat *Constraints Matrix*

Cause and Effect Analysis		System Improvement Objectives	
Problem	Cause and Effect	System Objective	System Constraint
Belum diterapkan pemanfaatan data konsumen dan transaksi	Belum tersedianya data konsumen dan sistem pengelola data transaksi	Mengembangkan sistem video mining untuk menganalisa perilaku konsumen/pembeli untuk meningkatkan penjualan	Harus ada pengelompokan data

5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi problems, opportunities, dan directives.

P	Pimpinan sulit memantau tingkat penjualan pada perusahaan
I	Informasi yang dihasilkan tidak cukup dalam memenuhi kebutuhan pimpinan.
E	Biaya operasional yang digunakan dalam pembuatan laporan cukup tinggi.
C	Data dapat dimanipulasi oleh orang yang tidak berhak.
E	Pembuatan laporan memakan waktu yang lama.
S	Pelayanan terhadap pelanggan yang kurang memuaskan.

Problems:

Belum tersedianya data transaksi konsumen

Opportunities:

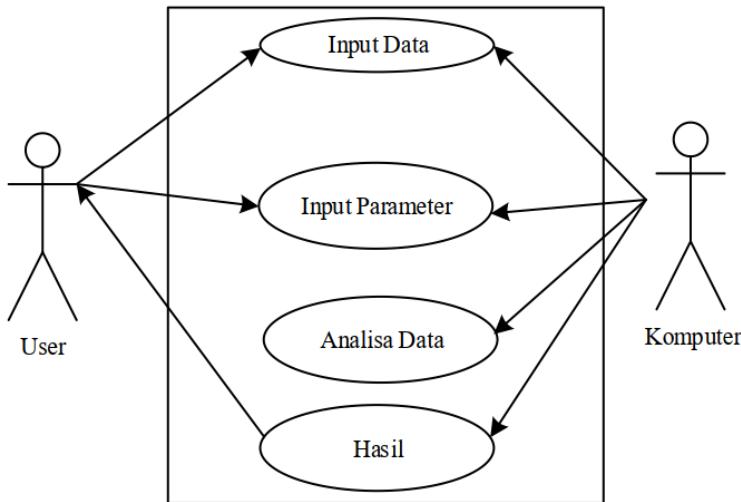
Kemudahan proses untuk melihat laporan

Kemudahan konsumen menemukan barang

Directives:

Dukungan pimpinan dalam pengembangan sistem

6. Susun dan gambarkan diagram *Use-Case Model*.



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.

1) Skenario Use Case Input Data

Nama Use Case : Input Data
Aktor : User
Tujuan : Penginputan data Penjualan
Deskripsi : User terlebih dahulu memulai aplikasi, kemudian user memasukkan data Penjualan yang kemudian akan diproses untuk analisa data.

2) Skenario Use Case Pemilihan Metode Algoritma

Nama Use Case : Pemilihan Metode Algoritma
Aktor : User
Tujuan : Pemilihan Metode Algoritma untuk pengolahan data Penjualan
Deskripsi : Setelah user menginputkan data-data transaksi, kemudian user memilih Algoritma untuk mengolah data.

3) Skenario Use Case Input Parameter

Nama Use Case : Input Parameter
Aktor : User
Tujuan : Penginputan nilai-nilai parameter untuk pengolahan data transaksi
Deskripsi : User menginputkan nilai-nilai parameter pada algoritma sistem yang digunakan, dimana algoritma sistem ini akan digunakan berdasarkan tools aplikasi yang digunakan untuk pengolahan data transaksi tersebut.

4) Skenario Use Case Analisa Data

Nama Use Case : Analisa Data
Aktor : Sistem
Tujuan : Pengolahan data transaksi sebagai proses analisa data
Deskripsi : Setelah user menginput data, memilih algoritma dan memasukkan nilai-nilai parameter, maka kemudian sistem akan memproses data tersebut sebagai fungsi analisa data, sehingga sistem nantinya akan menampilkan hasil dari pengolahan data tersebut.

NAMA : MEIGI RAHMAN

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5) Skenario Use Case Hasil

Nama Use Case : Hasil

Aktor : Sistem

Tujuan : Menampilkan hasil analisa data

Deskripsi : Setelah proses diagnosa selesai yang dilakukan oleh sistem, sistem akan menampilkan hasil analisa data tersebut yang berfungsi sebagai output dari pengolahan data tersebut. Hasil analisa inilah yang dinamakan sebagai informasi yang bermaanfaat untuk yang membutuhkannya.

Nim : 202420046
Nama : Mohammad Ilham

UTS

ADVANCED IS ANALYSIS AND DESIGN KELAS MTI 19A

Dosen Pengasuh
M.Izman Herdiansyah,MM,PhD
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4. Buat *Constraints Matrix*

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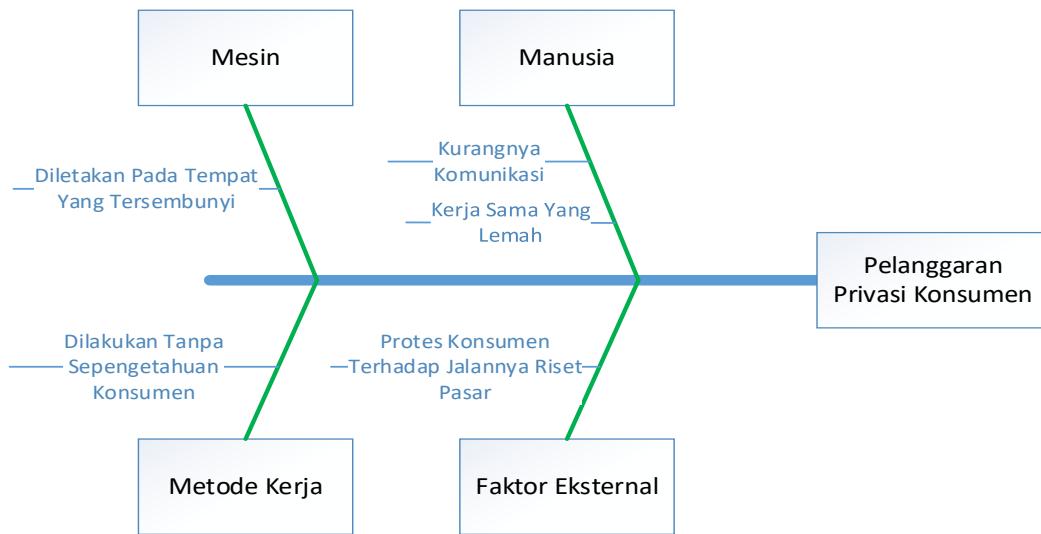
Jawaban

1. Masalahnya adalah Camera yang disebarluaskan disupermarket merupakan camera tersembunyi yang tidak diketahui oleh konsumen. Adapun beberapa konsumen yang mengetahui hal tersebut langsung menutup camera dan memprotes dengan berkata “bukankah ini ilegal, seperti menguntit? Bukankah seharusnya ada undang-undang melarangnya?” ,

Maka dari itu masalah tersebut diselesaikan oleh pihak perusahaan riset dengan menandatangani perjanjian bersama klien dimana mereka berjanji untuk tidak mengungkapkan identitas mereka.

2. - Super Market tidak perlu menggunakan video miners,
 - Implikasi strategis perusahaan sebagai akibat strategis pesaing adalah khawatirnya pembeli akan merasa terasingkan dan mengeluh karena pelanggaran privasi mereka jika mereka tahu.
 - Peluang nya adalah mendapatkan data riset pemasaran yang dideteksi oleh video miners
 - Ancaman nya adalah dilaporkan pada pihak yang berwajib karena melanggar hak privasi pribadi

3. Berikut adalah proses *Cause-Effect Analysis* :



- Problemnya adalah melakukan riset pasar tanpa sepengetahuan konsumen / secara diam-diam, sehingga takutnya terjadinya konflik terhadap hak privasi konsumen. Seperti pada kasus pada Caesars Atlantic City Hotel Casino yang didenda \$80.000.
- Opportunitiesnya adalah dapat menganalisis hasil riset pasar secara rahasia demi mencapai tujuan peneliti
- Objectivesnya adalah mengetahui aktivitas pada setiap gerak konsumen seperti mata, sebyuman, kerutan dalam bentu data yang dihasilkan dari camera tersembunyi

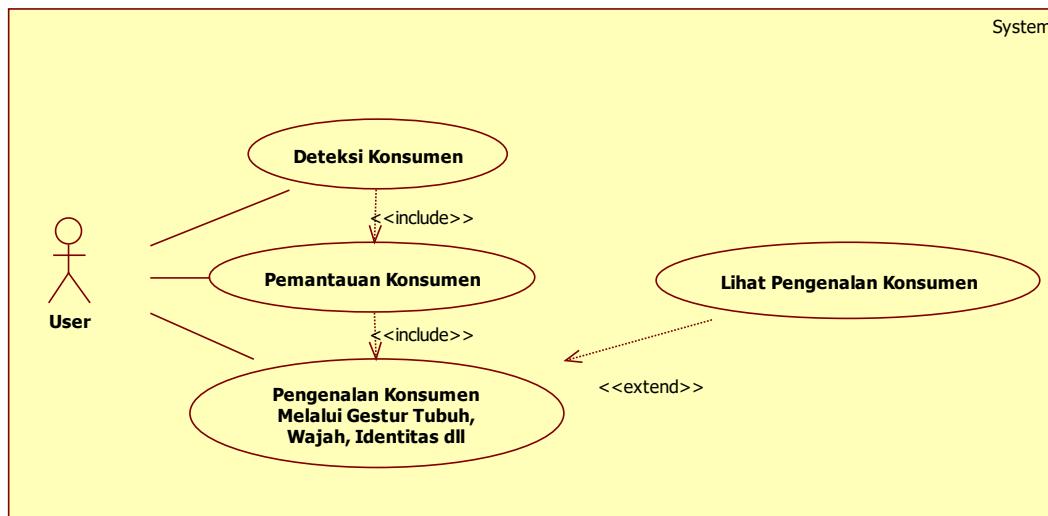
4. Constraints Matrix

System Improvement Objectives	
System Objective	System Constraint
Membantu dalam menganalisa konsumen dalam riset pemasaran	System yang dibuat harus dapat memberikan informasi berupa identitas konsumen, produk yang dibeli, jangka waktu yang diperlukan dalam pembelian dll.

5. PIECES mempunyai 6 kerangka kerja yaitu (Performance, Information, Economy, Control, Efficiency, Service) :

- Performance (Kinerja) : Waktu penggeraan membutuhkan butuh berjam-jam untuk di baca oleh computer
- Information (Informasi) : Akurat, karena informasi yang dihasilkan dapat terlihat pada camera pengintai seperti (pengenalan wajah, gesture tubuh dll)
- Economy (Ekonomi) : Membutuhkan biaya yang banyak untuk perlengkapan camera dan alat pendukung lainnya
- Control (Kontrol) : Peletakan deteksi pada camera kurang pengontrolan karena konsumen rentan dapat melihat kamera tersebut sehingga mengakibat kurang nyaman nya konsumen.
- Efficiency (Efisiensi) : Sumber Tenaga : Pendeksi yang dilakukan tidak dilakukan secara fisik, maka dari itu pekerjaan dapat berjalan sesuai rencana, sumber biaya : material yang digunakan camera, sensor dll.
- Service (Pelayanan) : pelayanan ini dilakukan secara diam-diam. Sehingga khawatirnya diketahui oleh konsumen.

6. Berikut adalah diagram use case model pada kasus diatas.



7. Proses diagram *Use Case*

User dapat melihat aktivitas konsumen, ketika konsumen memasuki supermarket, sensor akan bekerja dan camera akan melakukan pemantauan dan pengenalan kosumen (identitas, pengenalan wajah, gesture tubuh).

No	Nama	Deskripsi
1	Deteksi Konsumen	Camera mendeteksi konsumen yang masuk ke supermarket

2	Pemantauan Konsumen	Camera akan melakukan pemantauan terhadap konsumen
3	Pengenalan Konsumen	Sistem melakukan pengenalan konsumen berupa identitas, pengenalan wajah dan gesture tubuh
4	Lihat Pengenalan Konsumen	Hasil dari pemantauan dan pengenalan konsumen berupa data

Wawancara :

- 1) Apa yang pertama kamu lihat saat sedang menunggu antrian?
- 2) Berapa lama waktu yang kamu butuhkan dalam berbelanja?
- 3) Berapa banyak yang kamu beli pada produk yang ditawarkan oleh supermarket?
- 4) Produk apa saja yang kamu butuhkan pada setiap bulan?
- 5) Apakah pelayanan super market memuaskan?

NAMA : RIKE SUCIHATI

NIM : 202420048

UTS

ADVANCED IS ANALYSIS AND DESIGN

Dosen Pengasuh

M.Izman Herdiansyah,MM,PhD

Sabtu, 17 April 2021

1. Sebutkan dan jelaskan masalah yang harus diselesaikan ?

ShopperTrak RCT Corp sebuah perusahaan penelitian konsumen, menghitung pembeli secara nasional menggunakan 40.000 kamera yang ditempatkan di toko dan mal. ShopperTrak berkembang dalam penelitian pemasaran yang diaktifkan oleh teknologi yang dapat menganalisis gambar video tanpa mengandalkan mata manusia. ShopperTrak memperhitungkan berapa banyak pembelanja yang dibelanjakan, data yang didapatkannya dari perusahaan kartu kredit dan bank, dan diekstrapolasi ke luar ke seluruh lanskap ritel.

- Privasi dari konsumen dapat terxpouse ke public akibat dari penambang video tersebut, dan tidak adanya kepastian untuk pembeli bahwa video tersebut benar-benar akan dihancurkan oleh peneliti.
- Konsumen berasumsi bahwa dengan adanya kamera di dalam toko tersebut mereka sedang direkam untuk pembuatan film untuk penelitian pasar
- Para pembuat Video mengatakan kamera penelitian mereka kurang invasif dari kamera keamanan, karena subyek mereka tidak diteliti ketat sebagai tersangka keamanan
- Kamera yang tujuan untuk keamanan hanya perlu dikonfigurasi ulang menggunakan sensor canggih

2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

- = Supermarket perlu menggunakan video miners seperti pesaing, guna meningkatkan keuntungan dan meminimalisir penjualan produk yang tidak diminati konsumen.

Video miners dipasang guna untuk mempermudah perusahaan memantau konsumen nya, terutama di bagian keuangan. Dan juga dapat dengan mudah memperhitungkan berapa banyak pembelanja yang dibelanjakan dan banyak nya pelanggan. Tidak menutup kemungkinan juga ada ancaman dari pemasangan video miners tersebut, Ketika data pribadi dari konsumen tersebar, bisa saja pihak supermarket akan dikenakan denda akibat dari penambangan video yang tidak diketahui konsumen.

3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems*, *opportunities*, dan *objectives* dari perlunya proyek pengembangan sistem dilakukan ?

<i>Problem or Opportunity</i>	<i>Causes and Effects</i>	<i>Objectives</i>
1. Rekaman video dilakukan tanpa sepengetahuan orang-orang yang direkam.	1. Konsumen merasa pelanggaran privasi	1. Rekaman video konsumen tidak mengungkapkan nama mereka dan rekaman itu menjadi rahasia. 2.
2. Jika konsumen tau tentang analisis ini bisa saja pihak supermarket akan mendapatkan complain dari konsumen	2. Pihak supermarket bisa mengetahui pasar agar bisa meminimalisir kerugian	3. Dapat meriset penjualan supermarket.

4. Buat *Constraints Matrix* ?

SYSTEM IMPROVEMENT OBJECTIVES	
Objectives	Constraints
<ol style="list-style-type: none"> 1. Meningkatkan efisiensi sistem pencatatan pemasukkan stock dan konsumen 2. Optimasi <i>entry</i> data barang sehingga tidak perlu dilakukan pencatatan berulangkali 3. Membantu toko untuk menganalisa konsumennya 	<ol style="list-style-type: none"> 1. Sistem baru yang dikembangkan harus tetap sesuai dengan kebijakan yang berlaku di Supermarket 2. Pengembangan sistem yang baru harus tetap memudahkan perusahaan sehingga para pengguna sistem tidak membutuhkan waktu yang lama untuk beradaptasi dengan sistem yang baru 3. Sistem yang dibuat untuk mempelajari atau menganalisa calon pembeli ditoko, untuk menentukan siapa yang akan membeli dan apa yang akan mereka beli.

5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi problems, opportunities, dan directives ?

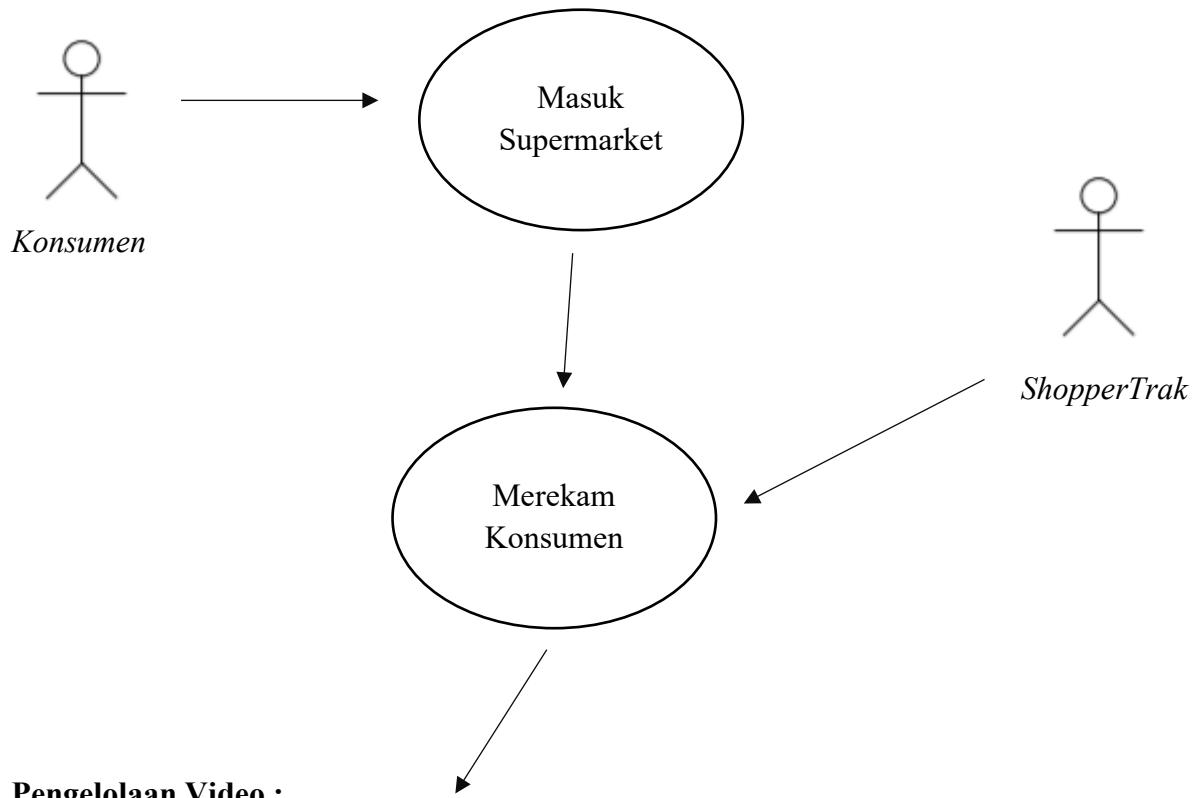
Jenis Kebutuhan	Penjelasan
Kinerja (<i>Performance</i>)	<ul style="list-style-type: none"> - kamera video digital dapat diprogram sehingga gambar-gambar dapat dibaca dengan cepat oleh komputer. - Dengan video miners proses Analisa menjadi lebih mudah dan tepat

Informasi (<i>Information</i>)	<ul style="list-style-type: none"> - Data tersimpan dengan cepat dan rahasia - Informasi dari video miners lebih tepat dan akurat dalam membaca perilaku konsumen seperti, melihat detail pada ekspresi wajah dan pergerakan mata konsumen - Mengukur persentase pembeli yang membeli dan persentase yang hanya browses
Segi Ekonomi (<i>Economic</i>)	<ul style="list-style-type: none"> - Biaya yang dibutuhkan untuk pengembangan sistem tidak melebihi <i>budget</i> yang sudah ditentukan. - Pengolahan data dengan sistem menjadi lebih efisien waktu dan biaya karyawan juga menurun
Pengontrolan Sistem (<i>Control</i>)	<ul style="list-style-type: none"> - Pengendalian control melalui sistem memberikan informasi dan hasil yang lebih optimal - Memiliki <i>backup data</i>, sehingga sistem lebih <i>reliable</i>. - Meningkatkan keamanan data yang bersifat privasi.
Efisiensi Sistem (<i>Eficiency</i>)	<ul style="list-style-type: none"> - Dengan menggunakan sistem Video miners, memudahkan bagi perusahaan guna meningkatkan keuntungan dan meminimalisir penjualan produk yang tidak diminati pelanggan. - Video miners juga dipasang guna untuk mempermudah perusahaan

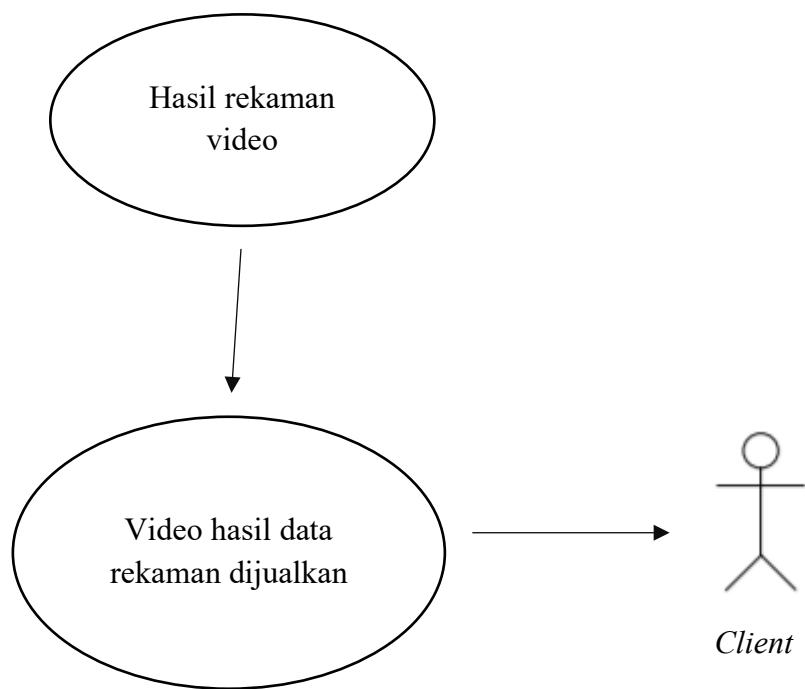
	<p>memantau konsumen nya, terutama di bagian keuangan.</p> <ul style="list-style-type: none"> - Dan juga dapat dengan mudah memperhitungkan berapa banyak pembelanja yang dibelanjakan dan banyak nya konsumen
Pelayanan Sistem (<i>Service</i>)	<ul style="list-style-type: none"> - Memberikan data-data yang akurat dan lengkap. - Data yang ditampilkan harus mudah dibaca dan terstruktur. - Sistem harus <i>user friendly</i>. - Pelayanan yang diberikan kepada konsumen menjadilebih tepat karena supermarket dapat membaca konsumen

6. Susun dan gambarkan diagram *Use-Case Model* ?

Perekaman Video :

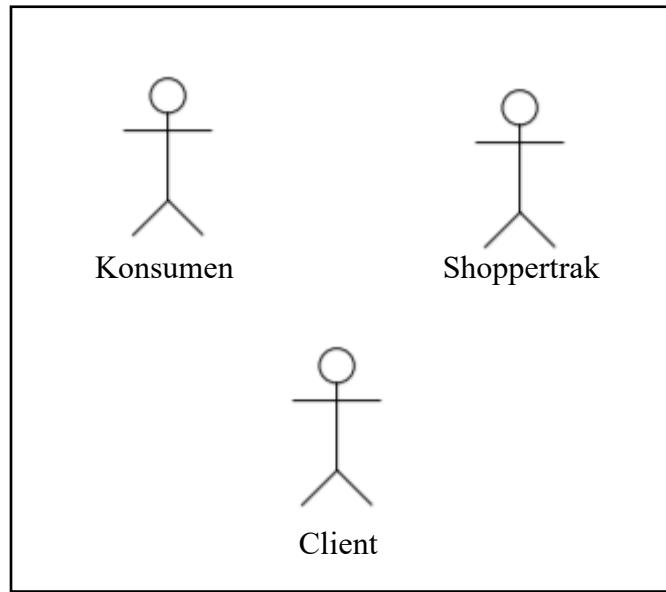


Pengelolaan Video :



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan ?

- ✓ Dalam sistem video miners supermarket, dari identifikasi pelaku bisnis yang terlibat di atas maka dapat ditentukan beberapa aktor yaitu konsumen, shoppertrak dan *client* :



- ✓ Mengidentifikasi *use case* persyaratan bisnis yaitu mendeskripsikan interaksi antara aktor dengan system :

No	Use case	Deskripsi
1	Masuk Supermarket	Konsumen memasuki supermarket untuk membeli yang dia butuhkan
2	Merekam Konsumen	Shoppertrak merekam video semua kegiatan konsumen yang dilakukan didalam supermarket
3	Hasil rekaman video	Hasil rekaman video diolah menjadi data konsumen
4	Video dijualkan	Video hasil data rekaman dijualkan ke client untuk diteliti.
5	Menerima data	Client menerima data tersebut.

UTS

NAMA : TONI TRI ATMOJO

NIM 202420063

**ADVANCED IS ANALYSIS AND DESIGN
KELAS MTI 19A**

Dosen Pengasuh

M.Izman Herdiansyah,MM,PhD

Sabtu/17 April 2021

CASE:

**'Video Miners' Use Cameras Hidden in Stores to Analyze Who Shops, What They Like
By JOSEPH PEREIRA Staff Reporter of THE WALL STREET JOURNAL**

BRAINTREE, Mass. -- Stepping into a Gap store at the South Shore Shopping Plaza on a recent evening, Laura Munro became a research statistic. Twelve feet above her, a device resembling a smoke detector, mounted on the ceiling and equipped with a hidden camera, took a picture of her head and shoulders.

The image was fed to a computer and shipped to a database in Chicago, where ShopperTrak RCT Corp., a consumer research firm, keeps count of shoppers nationwide using 40,000 cameras placed in stores and malls.

ShopperTrak, whose profile has risen this holiday season as appetite grows for more real-time shopping data, is a leader in "video mining" -- an emerging field in marketing research enabled by technology that can analyze video images without relying on human eyes.

ShopperTrak says it doesn't take pictures of faces. The company worries that shoppers would perceive that as an invasion of privacy. But nearly all of its videotaping is done without the knowledge of the people being taped.

"I didn't even know there was a camera up there," says Ms. Munro, a public-transit manager who popped into the mall on her way home from work to find a gift for her 12-year-old daughter.

Using proprietary software to gauge the size of the images of people, a ShopperTrak computer determined that Ms. Munro was an adult, not a child, and thus a bona fide shopper. Weeding out youngsters is critical in accurately calculating one of the valuable bits of data ShopperTrak sells -- the percentage of shoppers that buys and the percentage that only browses. It arrives at this data, including the so-called conversion rate, by comparing the number of people taped entering the store with the number of transactions.

Ms. Munro's visit was tallied up twice: once as a visitor to the Gap and once in a national count of shoppers. Gap Inc., of San Francisco, pays ShopperTrak for the tally of Gap shoppers. ShopperTrak sells the broader data -- gleaned from 130 retail clients and 380 malls -- to economists, bankers and retailers.

ShopperTrak takes into account how much shoppers spend, data that it gets from credit-card companies and banks, and extrapolates outward to the entire retail landscape. "We can get sales and traffic figures that are identical to the government's, two months before they can issue their report," says Bill Martin, ShopperTrak's founder and president.

Of the millions of shoppers videotaped daily in the U.S., many are aware that security cameras are watching to detect shoplifting. In some cases, stores post signs to disclose such monitoring. But there is far less awareness by consumers that they are being filmed for market research.

ShopperTrak discloses its clients -- a list that includes Gap and its Banana Republic unit; Limited Brands Inc., of Columbus, Ohio, and its Victoria's Secret chain; Payless Shoe Source Inc., of Topeka, Kan; American Eagle Outfitters Inc., of Warrendale, Pa.; and Children's Place Retail Stores Inc., of Secaucus, N.J.

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Selamat bekerja

JABAWAN

1. Dalam riset pemasaran dapat menganalisis gambar video tanpa bergantung pada mata manusia menghitung jumlah pembeli yang direkam setiap hari. Banyak yang menyadari bahwa kamera keamanan mengawasi untuk mendeteksi pencurian. Tapi jauh lebih sedikit kesadaran konsumen bahwa mereka difilmkan untuk riset pasar.
Beberapa perusahaan riset lain yang pembeli rekaman video mengatakan bahwa mereka menandatangani perjanjian dengan klien di mana mereka berjanji untuk tidak mengungkapkan nama mereka. Mereka mengatakan klien mereka ingin rekaman itu dirahasiakan - dan khawatir pembeli akan merasa terasing atau mengeluhkan pelanggaran privasi jika mereka tahu.

Masalah yang harus dilakukan adalah belum ada data tentang barang yang sering dibeli oleh pelanggan. Pihak toko harus menyembunyikan identitas pembeli yang digunakan sebagai survey pengunjung/pembeli.

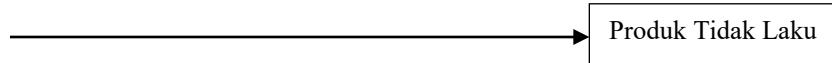
2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

Perlu untuk mengetahui atau mensurvei barang atau jenis apa saja yg dibeli oleh pelanggan atau bahkan perilaku yg tidak disuka oleh pelayanan karyawan ketika mereka berbelanja
Peluang ancaman yang muncul yaitu karna vidio ini dari kamera yg tersembunyi dan tidak diketahui oleh pembeli mengakibatkan pembeli akan menganggapnya sebagai pelanggaran privasi

Strategi merupakan suatu alat untuk mencapai tujuan tertentu. Strategi perusahaan merupakan serangkaian roses perencanaan jangka pendek dan jangka panjang sebuah perusahaan. Oleh karena itu, dalam merumuskan strategi perusahaan sangatlah diperlukan pemikiran matang. Dalam menyusun strategi digunakan proses analitis. Hal ini dilakukan untuk melakukan singkronisasi terhadap visi, misi ,sasaran, tujuan dan budaya perusahaan.

Dengan demikian, dalam menentukan alternatif strategis yang layak, perencana strategis harus dapat melakukan proses evaluasi dan meninjau kembali visi, misi dan tujuan perusahaan.

3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems*, *opportunities*, dan *objectives* dari perlunya proyek pengembangan sistem dilakukan.



4. Buat *Constraints Matrix*

<i>Couse and Effect Analysis</i>		<i>System Improvement Objectives</i>	
<i>Problem or Opportunity</i>	<i>Couse and Effects</i>	<i>System Objective</i>	<i>System Constraint</i>

5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi *problems*, *opportunities*, dan *directives*.

- 1) Performance

- Througput

Sistem Analisis Perilaku konsumen atau jumlah orang yang berbelanja dibandingkan hanya melihat-lihat produk saja dilakukan secara manual oleh pegawai toko.

- Respone Time

Proses pencatatan untuk setiap analisis perilaku konsumen didasarkan pada kuesioner atau melalui transaksi pembelian membutuhkan waktu 10-15 menit, dan waktu antrian antara satu orang dan yang lain membutuhkan waktu 3 menit. Antrian yang panjang dan proses pencatatan yang lama dapat menyebabkan kurang efisien dan terkesan kurang profesional.

- 2) Information dan Data

- Output

Informasi yang dihasilkan dalam kuesioner atau bukti transaksi pembelian tidak sesuai yang di inginkan. Contohnya informasi data kuesioner pembeli akan memberikan data yg tidak sebenarnya karena takut identitasnya diketahui dalam pengisian angket kuesioner begitupun data transaksi pembelian perlu direkap kembali untuk menganalisa datanya.

- Input

Pada sistem lama proses pengolahan data kuesioner menggunakan form yang perlu dilakukan beberapa tahap untuk menganalisanya begitupun transaksi pembelian

hanya diinput di mesin kasir. Hal ini dapat memberikan informasi yang kurang akurat karena kesalahan dalam penulisan. Sehingga informasi bisa menyesatkan penerima informasi.

- Stored Data

Penyimpanan data seperti form kuesioner atau bukti transaksi pembelian disimpan tidak terintegrasi dan data tidak fleksibel untuk pemenuhan informasi data baru

3) Economics Costs

Banyak memakan biaya karena tidak terintegrasi data perlu pemindahan data dulu dalam menganalisis data dan perangkat yang digunakan berbeda beda.

4) Control

Tidak adanya pembatasan hak akses terhadap informasi yang ada. Lemari penyimpanan berkas dikunci dengan gembok kecil saja, sehingga orang lain dengan mudah membongkar dan mengakses informasi.

5) Efficiency

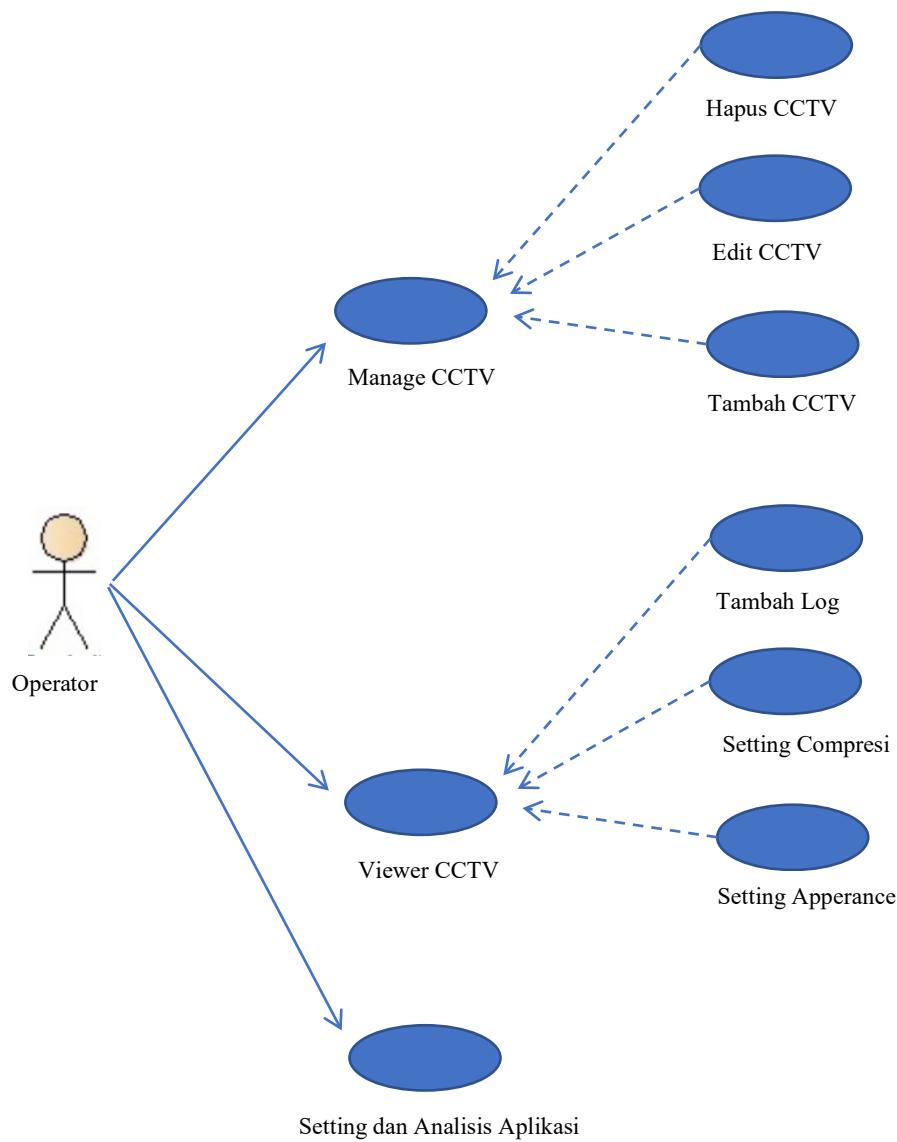
Penggunaan kertas yang digunakan sebagai data atau dokumen terlalu banyak menyebabkan dokumen tertumpuk dan tidak tersusun rapi. Sehingga membutuhkan waktu yang lama agar dapat menemukan satu laporan atau pembukuan yang ingin dicari.

6) Service

Berdasarkan hasil pengamatan Analis Perilaku Pelanggan atau jumlah orang yang berbelanja memakan waktu lama dan kurang efisien, disebabkan karena data diambil dari kuesioner atau transaksi pembelian tidak secara otomatis melalui video yang direkam.

6. Susun dan gambarkan diagram *Use-Case Model*.

Diagram Usecase Analisis Perilaku Pembeli atau Jumlah Orang yang Berbelanja dengan Vidio CCTV



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.

Nama : Tri Gunendro

Kelas : MTI 24 B

UTS

ADVANCED IS ANALYSIS AND DESIGN KELAS MTI 19A

Dosen Pengasuh

M.Izman Herdiansyah,MM,PhD

Sabtu/17 April 2021

CASE:

'Video Miners' Use Cameras Hidden in Stores to Analyze Who Shops, What They Like By JOSEPH PEREIRA Staff Reporter of THE WALL STREET JOURNAL

BRAINTREE, Mass. -- Stepping into a Gap store at the South Shore Shopping Plaza on a recent evening, Laura Munro became a research statistic. Twelve feet above her, a device resembling a smoke detector, mounted on the ceiling and equipped with a hidden camera, took a picture of her head and shoulders.

The image was fed to a computer and shipped to a database in Chicago, where ShopperTrak RCT Corp., a consumer research firm, keeps count of shoppers nationwide using 40,000 cameras placed in stores and malls.

ShopperTrak, whose profile has risen this holiday season as appetite grows for more real-time shopping data, is a leader in "video mining" -- an emerging field in marketing research enabled by technology that can analyze video images without relying on human eyes.

ShopperTrak says it doesn't take pictures of faces. The company worries that shoppers would perceive that as an invasion of privacy. But nearly all of its videotaping is done without the knowledge of the people being taped.

"I didn't even know there was a camera up there," says Ms. Munro, a public-transit manager who popped into the mall on her way home from work to find a gift for her 12-year-old daughter.

Using proprietary software to gauge the size of the images of people, a ShopperTrak computer determined that Ms. Munro was an adult, not a child, and thus a bona fide shopper. Weeding out youngsters is critical in accurately calculating one of the valuable bits of data ShopperTrak sells -- the percentage of shoppers that buys and the percentage that only browses. It arrives at this data, including the so-called conversion rate, by comparing the number of people taped entering the store with the number of transactions.

Ms. Munro's visit was tallied up twice: once as a visitor to the Gap and once in a national count of shoppers. Gap Inc., of San Francisco, pays ShopperTrak for the tally of Gap shoppers. ShopperTrak sells the broader data -- gleaned from 130 retail clients and 380 malls -- to economists, bankers and retailers.

ShopperTrak takes into account how much shoppers spend, data that it gets from credit-card companies and banks, and extrapolates outward to the entire retail landscape. "We can get sales and traffic figures that are identical to the government's, two months before they can issue their report," says Bill Martin, ShopperTrak's founder and president.

Of the millions of shoppers videotaped daily in the U.S., many are aware that security cameras are watching to detect shoplifting. In some cases, stores post signs to disclose such monitoring. But there is far less awareness by consumers that they are being filmed for market research.

ShopperTrak discloses its clients -- a list that includes Gap and its Banana Republic unit; Limited Brands Inc., of Columbus, Ohio, and its Victoria's Secret chain; Payless Shoe Source Inc., of Topeka, Kan; American Eagle Outfitters Inc., of Warrendale, Pa.; and Children's Place Retail Stores Inc., of Secaucus, N.J.

Several other research companies that videotape shoppers say they sign agreements with clients in which they pledge not to disclose their names. They say their clients want the taping to be secret -- and worry shoppers would feel alienated or complain of privacy invasion if they knew.

Katherine Albrecht, founder and director of Caspian, a Cambridge, Mass., consumer-advocacy group, says consumers have "no idea such things as video tracking are going on" and should be informed. When she tells them about such activities, she says the response she often hears is, "Isn't this illegal, like stalking? Shouldn't there be a law against it?" There aren't any state laws forbidding retailers from videotaping shoppers for research -- although in New Jersey last week, Caesars Atlantic City Hotel Casino was fined \$80,000 for videotaping the breasts and legs of female employees and customers with cameras intended for security.

Some research companies' cameras, with lenses as small as a quarter, can provide data on everything from the density of shopping traffic in an aisle to the reactions of a shopper gazing at the latest plasma TV set. The cash register is a popular spot for cameras, too. But cameras can be found in banks, fast-food outlets and hotel lobbies (but not guest rooms).

Video miners say their research cameras are less invasive than security cameras, because their subjects aren't scrutinized as closely as security suspects. Images, they say, are destroyed when the research is done.

Robert Bulmash, founder of the Private Citizen Inc., of Naperville, Ill., which advocates for privacy rights, says that being in a retailer's store doesn't give a retailer "the right to treat me like a guinea pig." He says he wonders about assurances that images are destroyed, since there isn't any way to verify such claims. The pictures "could be saved somewhere in that vast digital universe and some day come back to haunt us," he says.

Already, video images can be subpoenaed from retailers for law-enforcement purposes. Technology capable of matching a photo with an individual's identity, say from credit-card transactions, "has certainly arrived," says Rajeev Sharma, a Penn State University computer science professor who has launched a company that is creating shopper-monitoring systems. It isn't certain whether retailers are availing themselves of the know-how. Credit card companies currently aren't sharing individuals' financial information with retailers, he adds, but retailers have their own customer databases as the result of loyalty cards, store credit cards and other in-house programs. Theoretically, they could link a transaction at a cash register with the face of a shopper appearing on the videotape.

Dr. Sharma's start-up, Advanced Interfaces Inc., of State College, Pa., is expected this week to launch a Web site, videomining.com, highlighting the company's patented "computer vision" technologies.

In a pilot project conducted last year in the Philadelphia area, Advanced Interfaces set up nine cameras in each of two McDonald's Corp. restaurants to find out which consumer types would find a new salad item most appealing. The research was done without consumers' knowledge, says Dr. Sharma, who is Advanced Interfaces' chief executive.

Seven of the cameras were already in place for security purposes and needed only to be reconfigured using Advanced's sensors. Two additional cameras were positioned in the ceiling directly over cash registers. By measuring the shapes of people's faces, the sensors were able to provide a breakdown of the fast-food customers by race, gender and age group, he says. The videos also revealed the length of time customers spent waiting in line or looking at the menu before ordering. Mr. Sharma declined to discuss the findings.

All of the video was subsequently destroyed, he says. "Only the computers and no humans saw the pictures of the customers," Mr. Sharma says. Advanced is conducting similar consumer-behavior analysis this holiday season for three other retailers that Mr. Sharma declined to identify.

Video mining is being spurred by digital video cameras. Unlike their analog counterparts, digital video cameras can be programmed so that the images can be quickly read by computers -- taking only hours to complete tasks that might have taken weeks for humans to do.

In a recent assignment that Kahn Research Group, of Huntersville, N.C., completed for American Express Co., computers took only a couple of days to sift through 64 hours of tape. Kahn researchers hid four cameras near the checkout counter at a couple of supermarkets in Southern California to study whether American Express gift cards should be displayed off in a spot by themselves, or lumped with competing brands near the cash registers.

Researchers were interested in customers' facial expressions and eye movements as they spotted the gift cards, and whether they walked to a display to pick up a card. Kahn cameras, each the size of a golf ball, were hidden behind the displays. The devices were programmed to detect fast-eye movement, smiles and frowns, says Greg Kahn, the company's CEO.

The research, which involved filming 2,000 shoppers, was "really not invasive," Mr. Kahn says. "Nobody knew they were being recorded and our work didn't interfere with the store environment. Had we tried to interview people, the process would have taken much longer."

And had people known they were being taped, he says, "I know many of the shoppers would have stuck their hands in front of the camera lens and refused to be recorded."

A spokeswoman for American Express described the project as a "pilot program ... that's not for public consumption" and declined to comment further.

It isn't clear whether the American public will be as tolerant of secret market research using videotape as they are of security cameras. There are 29 million cameras videotaping people in airports, government buildings, offices, schools, stores and elsewhere, according to one widely cited estimate in the security industry.

(Write to Joseph Pereira at joe.pereira@wsj.com)

Dari kasus diatas:

1. Sebutkan dan jelaskan masalah yang harus diselesaikan.

Jawab :

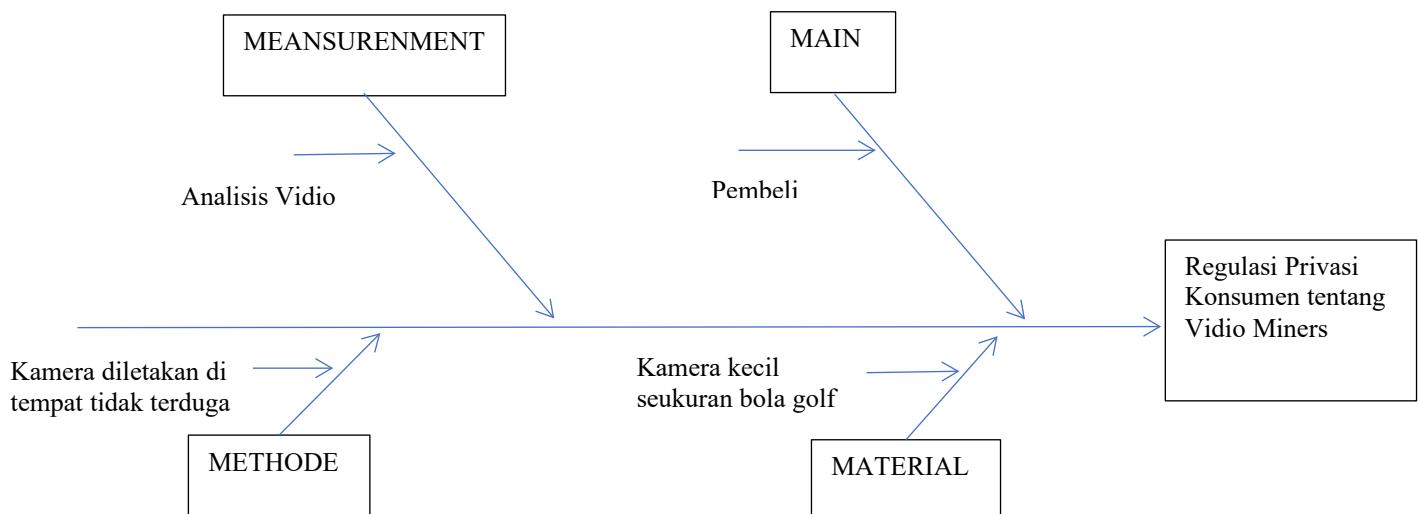
- Belum ada data analis belanja real time atau persentase setiap konsumen, hasilnya juga dapat mengetahui kepuasan, keinginan seorang konsumen, kebiasaan konsumen berbelanja suatu barang dengan menggunakan video camera tersembunyi.
- Pemilik Toko kawatir penambangan data dalam bentuk video, sehingga jika diketahui pembeli, pihak pembeli merasa nyaman akan data video yang direkam karena privasi.

2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

Jawab :

- Perlu untuk mengetahui atau mensurvei barang atau jenis apa saja yg dibeli oleh pelanggan atau bahkan perilaku yg tidak disuka oleh pelayanan karyawan ketika mereka berbelanja.
- Implikasi Strategisnya adalah dengan mengumpulkan data sebanyak banyaknya dari hasil rekaman tersebut kemudian kita olah menjadi persentase data untuk menghasilkan suatu informasi yang kita perlukan, perusahaan tersebut akan lebih bisa melihat pangsa pasar, tau apa saja barang apa yg sedang disukai oleh orang-orang. model barang apa yg banyak peminatnya. apa yg paling laku dibeli dan juga pihak pesaing jadi tau dan dpt mengambil data pembeli, apa yg mereka butuhkan dan inginkan.
- Peluang ancaman yang muncul yaitu karna vidio ini dari kamera yg tersembunyi dan tidak diketahui oleh pembeli mengakibatkan pembeli akan menganggapnya sebagai pelanggaran privasi.

3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems*, *opportunities*, dan *objectives* dari perlunya proyek pengembangan sistem dilakukan.



“Cause and Effect digunakan untuk mengidentifikasi dan menunjukkan hubungan antara sebab dan

akibat agar dapat menemukan akar penyebab dari suatu permasalahan.

Jadi berdasarkan dari cerita soal sebetulnya masalahnya adalah perusahaan ingin mengetahui keinginan dari pembeli. Dalam teknologi yang canggih saat ini untuk mengetahui keinginan dari konsumen ada banyak metode dan berdasarkan jurnal diatas yang di tawarkan adalah menggunakan kamera yang dimana pelaksanaanya bebar benar tidak invasive tidak ada yang tahu itu di rekam mengumpulkan data data yang perlu sebagai persentase keinginan pembeli dan yang lebih hebat lagi tidak mengganggu lingkungan toko bayangkan jika mencoba pengambilan data secara manual pasti banyak kendala dari segi waktu saja sudah membutuhkan waktu yang lebih lama.

Itulah contoh pengembangan system yang terjadi di lapangan secara langsung, hanya menggunakan kamera kita dapat mengetahui keiiginan konsumen hanya menyimpulkan dari kebiasaan pembeli menggunakan teknologi yaitu kamera

4. Buat *Constraints Matrix*

Cause and Effect Analysis		System Improvement Objectives	
Problem or Opportunity	Cause and Effects	System Objective	System Constraint
Pengambilan Vidio untuk pengembangan sistem supermarket tanpa sepengetahuan konsumen	Menimbulkan masalah pelanggaran privasi konsumen dan ketidaknyamanan berbelanja	Diberikan sebuah edaran ketika berkunjung ke toko atau papan pengumuman tentang pengambilan video serta tujuannya	Sticker bergambar panah diarahkan ke CCTV agar pembeli tahu bahwa dalam pengawasan CCTV

5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi problems, opportunities, dan directives.

A. Performance

- Throughput

Pengambilan data masih di lakukan dengan cara sembunyi-sembunyi sehingga membuat consument merasa terganggu dengan privasinya.

- Response Time

Proses gambar dapat dengan cepat dibaca oleh komputer hanya membutuhkan waktu berjam-jam untuk menyelesaikan tugas yang mungkin membutuhkan waktu berminggu-minggu untuk dilakukan manusia

B. Information and Data

- Output

Proses yang di hasilkan kamera tidak sesuai dengan yang diharapkan karena terlalu banyak video yang didapat.

- Input

Video yang dihasilkan terlalu banyak sehingga membingungkan untuk di pilih dan di jadikan bahan riset.

- Stored Data

Data yang dihasilkan dari video tidak bisa disimpan lama karena dapat mengganggu privasi costumer.

C. Economics

Costs

Banyaknya biaya yang perlukan untuk riset karena perlukan banyak cctv di supermarket

D. Control

Penggunaan video miners kurang efektif dari kamera keamanan, karena subjek tidak bisa diteliti lebih dekat dan setelah penelitian video dihapus.

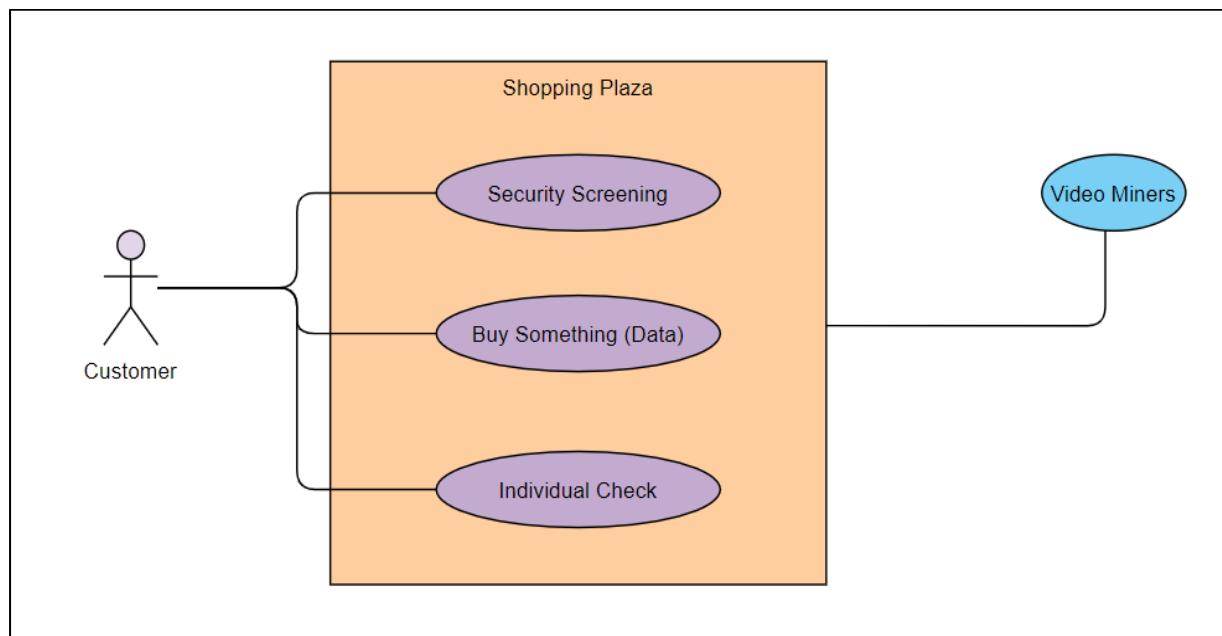
E. Efficiency

Data vidio secara berkala akan terhapus karena memori dari kamera ada batas kapasitasnya

F. Service

Dari pengamatan penggunaan video miners menghasilkan data dan gambar lebih cepat dibandingkan menggunakan penglihatan manusia dan juga lebih mudah untuk analisa data.

6. Susun dan gambarkan diagram *Use-Case Model*.



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.

Jawab :

- **Customer**, membeli sebuah produk ataupun memilih yang ingin ia beli.
- **Shopping plaza**, memiliki keamanan melalui video miners sehingga gerak gerik orang yang mencurigakan dapat ditangkap oleh video miners untuk mengamankan atau menyelamatkan customer maupun took.

- **Buy Something**, Setelah customer memesan sesuatu maka data yang di dapat dari pesanan tersebut adalah sebuah informasi yang sangat berguna utk product knowledge shopping plaza, apa yang di inginkan costumer mereka.
- **Individual check**, meliputi penangkapan wajah, gerak gerik customer dalam menunggu antrian atau pun dalam memesan sesuatu sehingga dapat menjadi sebuah informasi bagi shopping plaza, dan juga sebagai individual check dalam keamanan seperti mengetahui ciri sang pelaku (pakaian seperti apa yang ia pakai, dan seberapa besar ukuran tubuh pelaku).

Yuli Apriyanti
202420051

UTS
ADVANCED IS ANALYSIS AND DESIGN
KELAS MTI 19A
Dosen Pengasuh
M.Izman Herdiansyah,MM,PhD
Sabtu/17 April 2021

Dari kasus diatas:

1. Sebutkan dan jelaskan masalah yang harus diselesaikan.

ShopperTrak RCT Corp sebuah perusahaan penelitian konsumen, menghitung pembeli secara nasional menggunakan 40.000 kamera yang ditempatkan di toko dan mal. ShopperTrak berkembang dalam penelitian pemasaran yang diaktifkan oleh teknologi yang dapat menganalisis gambar video tanpa mengandalkan mata manusia. ShopperTrak memperhitungkan berapa banyak pembelian yang dibelanjakan, data yang didapatkannya dari perusahaan kartu kredit dan bank, dan diekstrpolasi ke luar ke seluruh lanskap ritel.

- Kamera yang digunakan supermarket kurang invasif daripada kamera keamanan, karena subjek mereka tidak diteliti sedekat tersangka keamanan.
- Konsumen berasumsi bahwa dengan adanya kamera di dalam toko tersebut mereka sedang direkam untuk pembuatan film untuk penelitian pasar.
- Privasi dari pembeli terekpose ke public akibat dari penambangan video tersebut, dan tidak ada kepastian untuk pembeli bahwa video tersebut benar-bnlar dihancurkan dan tidak tersebar.

2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

- Tentu perlu, guna meningkatkan keuntungan dan meminimalisir penjualan produk yang tidak diminati pelanggan. Video miners juga dipasang guna untuk

mempermudah perusahaan memantau konsumen nya, terutama di bagian keuangan. Dan juga dapat dengan mudah memperhitungkan berapa banyak pembelanja yang dibelanjakan dan banyak nya pelanggan.

- Ancamannya adalah Ketika data pribadi dari seorang pelanggan ternyata tersebar, bisa saja pihak supermarket akan dikenakan denda akibat dari penambangan video yang tidak diketahui pembeli mengakibatkan menjadi sebuah pelanggaran privasi dari pembeli.
3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems, opportunities*, dan *objectives* dari perlunya proyek pengembangan sistem dilakukan.

<i>Problem or Opportunity</i>	<i>Causes and Effects</i>	<i>Objectives</i>
1. Rekaman video dilakukan tanpa sepengetahuan orang-orang yang direkam. 2. Jika pembeli tahu tentang analisis ini bisa saja pihak supermarket akan mendapatkan complain dari pembeli.	1. Konsumen merasa pelanggaran privasi. 2. Pihak supermarket bisa mengetahui pasar agar bisa meminimalisir kerugian.	1. Rekaman video konsumen tidak mengungkapkan nama mereka dan rekaman itu menjadi rahasia. 2. Riset tujuan.

4. Buat *Constraints Matrix*

SYSTEM IMPROVEMENT OBJECTIVES	
<i>Objectives</i>	<i>Constraints</i>
<p>1. Meningkatkan efisiensi sistem pencatatan pemasukan stock dan konsumen</p> <p>2. Optimasi <i>entry</i> data barang sehingga tidak perlu dilakukan pencatatan berulangkali</p>	<p>1. Sistem baru yang dikembangkan harus tetap sesuai dengan kebijakan yang berlaku di Supermarket</p> <p>2. Pengembangan sistem yang baru harus tetap memudahkan perusahaan sehingga para pengguna sistem tidak membutuhkan waktu yang lama untuk beradaptasi dengan sistem yang baru</p>

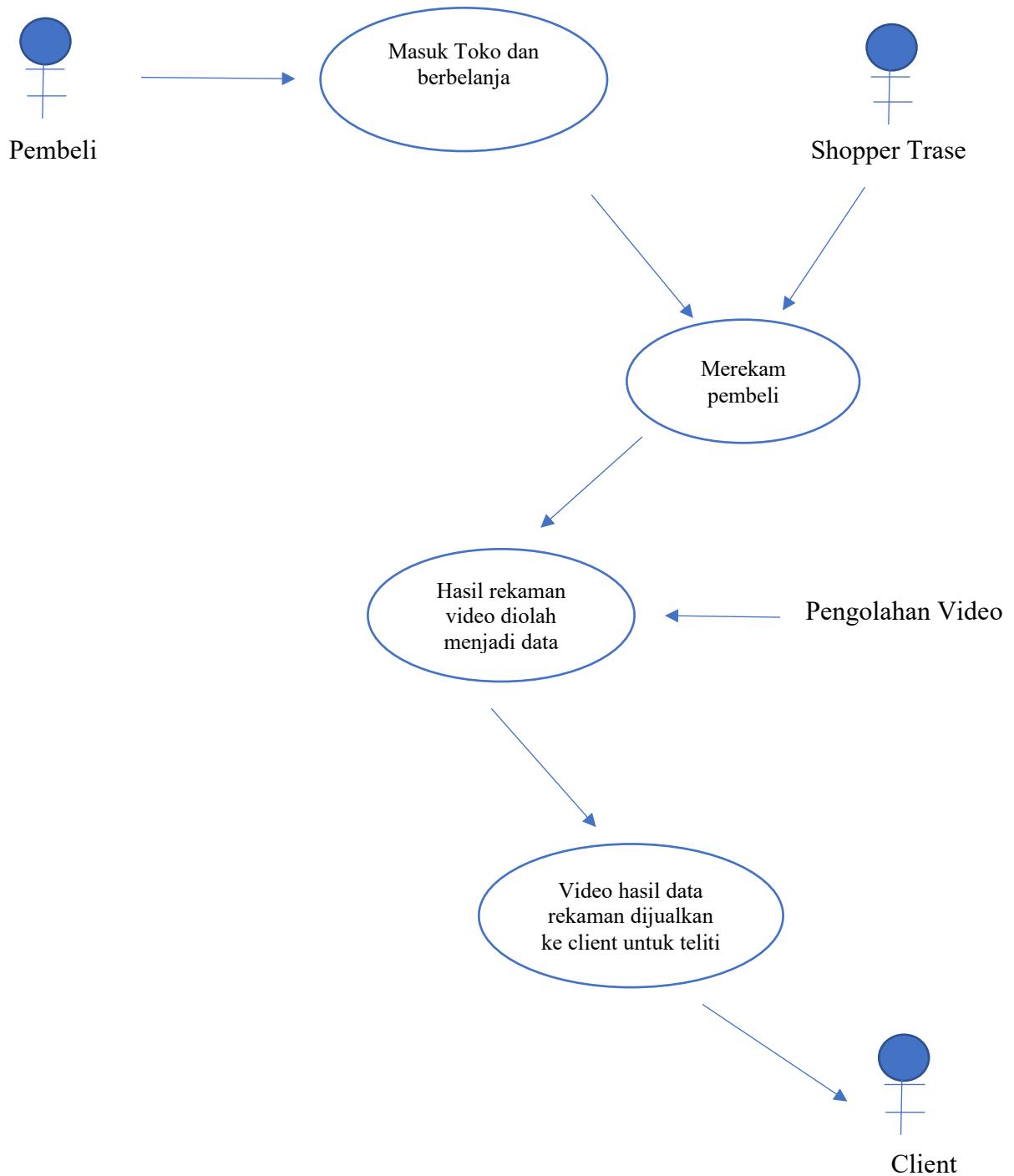
5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi problems, opportunities, dan directives.

Jenis Kebutuhan	Penjelasan
Kinerja (<i>Performance</i>)	<ul style="list-style-type: none"> - kamera video digital dapat diprogram sehingga gambar-gambar dapat dibaca dengan cepat oleh komputer.
Informasi (<i>Information</i>)	<ul style="list-style-type: none"> - Data tersimpan dengan cepat dan rahasia - Dapat melihat detail pada ekspresi wajah dan pergerakan mata pelanggan - Mengukur persentase pembeli yang membeli dan persentase yang

	<p>hanya browses</p>
Segi Ekonomi (<i>Economic</i>)	<ul style="list-style-type: none"> - Biaya yang dibutuhkan untuk pengembangan sistem tidak melebihi <i>budget</i> yang sudah ditentukan.
Pengontrolan Sistem (<i>Control</i>)	<ul style="list-style-type: none"> - Mengotentikasi <i>user</i> yang boleh menggunakan sistem sesuai dengan jabatannya. - Memiliki <i>backup data</i>, sehingga sistem lebih <i>reliable</i>. - Meningkatkan keamanan data yang bersifat privasi.
Efisiensi Sistem (<i>Eficiency</i>)	<ul style="list-style-type: none"> - Dengan menggunakan sistem Video Miners. maka akan memudahkan bagi perusahaan guna meningkatkan keuntungan dan meminimalisir penjualan produk yang tidak diminati pelanggan. Video miners juga dipasang guna untuk mempermudah perusahaan memantau konsumen nya, terutama di bagian keuangan. Dan juga dapat dengan mudah memperhitungkan berapa banyak pembelanja yang dibelanjakan dan banyak nya pelanggan.
Pelayanan Sistem (<i>Service</i>)	<ul style="list-style-type: none"> - Memberikan data-data yang akurat dan lengkap. - Data yang ditampilkan harus mudah dibaca dan terstruktur. - Sistem harus <i>user friendly</i>.

6. Susun dan gambarkan diagram *Use-Case Model*.

Perekaman Video :



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.

- Pertama pembeli memasuki supermarket untuk membeli yang dia butuhkan.
- Lalu shopper trase merekam video semua kegiatan pembeli yang dilakukan didalam supermarket.
- Dilanjutkan hasil rekaman video diolah menjadi data pembeli.
- Selanjutnya video hasil data rekaman dijualkan ke client untuk diteliti.
- Lalu terakhir client menerima data tersebut.

1. Sebutkan dan jelaskan masalah yang harus diselesaikan.

Jawab : Didalam artikel dijelaskan mengenai mengenai Supermarket dan retail yang bermitra dengan ShopperTrak RCT Corp melakukan perekaman menggunakan kamera tersembunyi mengenai prilaku konsumen didalam toko mereka guna mendapatkan data agar mampu memahami prilaku konsumen dan memanfaatkan data tersebut untuk meningkatkan keuntungan.

Permasalahan utama yang dibahas di dalam artikel ialah

- a.adanya kamera tersembunyi yang digunakan untuk penelitian menyebabkan konsumen merasa adanya pelanggaran hak pribadi
- b.Kamera yang digunakan supermarket kurang invasif
- c.Privasi dari pembeli terekpose ke public akibat dari penambangan video tersebut, dan tidak ada kepastian untuk pembeli bahwa video tersebut benar-benar dihancurkan dan tidak tersebar.

2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

Jawab : Supermaket perlu menggunakan analisis video miners seperti pesaing dikerenakan dengan diberlakukannya system tersebut maka supermarket mampu memahami prilaku konsumen dan menggunakannya untuk peningkatan keuntungan dan pelayanan

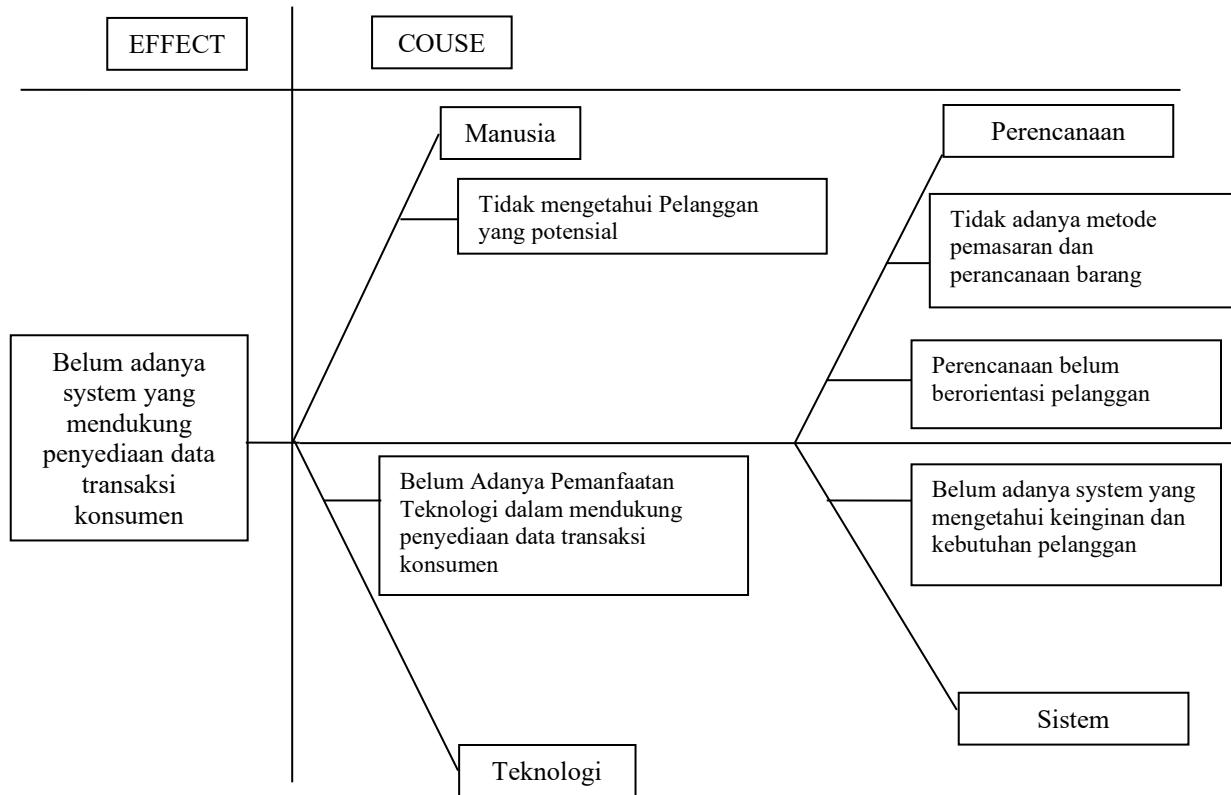
Implikasi pada perusahaan apabila diterapkanya strategi ini :

Dengam diterapkannya strategi ini maka supermarket dapat mengetahui perilaku konsumen dan transaksi pembelian barang dari setiap konsumen, kemudian dengan adanya informasi ini dapat memberikan pertimbangan tambahan bagi pimpinan supermarket dalam pengambilan keputusan mengenai pengaturan dan pembelian barang-barang yang dibutuhkan, sehingga meningkatkan profit, Hal ini juga mengantikan sistem lama seperti wawancara yang dilakukan guna mengetahui ketertarikan pengunjung akan barang yang dijual yang membutuhkan proses yang lama.

Ancaman :

Konsumen akan menganggap video mining sebagai pelanggaran privasi yang juga dapat menyebabkan ketidaknyamanan konsumen.

3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems*, *opportunities*, dan *objectives* dari perlunya proyek pengembangan system dilakukan.
 Jawab :



Problems

Belum diterapkan metode pemasaran dan pengelompokan konsumen.
 Belum ada teknologi yang mendukung penyediaan data transaksi konsumen
 Belum adanya perencanaan barang yang berorientasi pelanggan

Opportunities

Kemudahan konsumen dan pemenuhan keinginan konsumen

Objectives

Mengembangkan system video mining pada supermarket untuk menganalisa perilaku konsumen/pembeli untuk meningkatkan penjualan

4. Buat *Constraints Matrix*

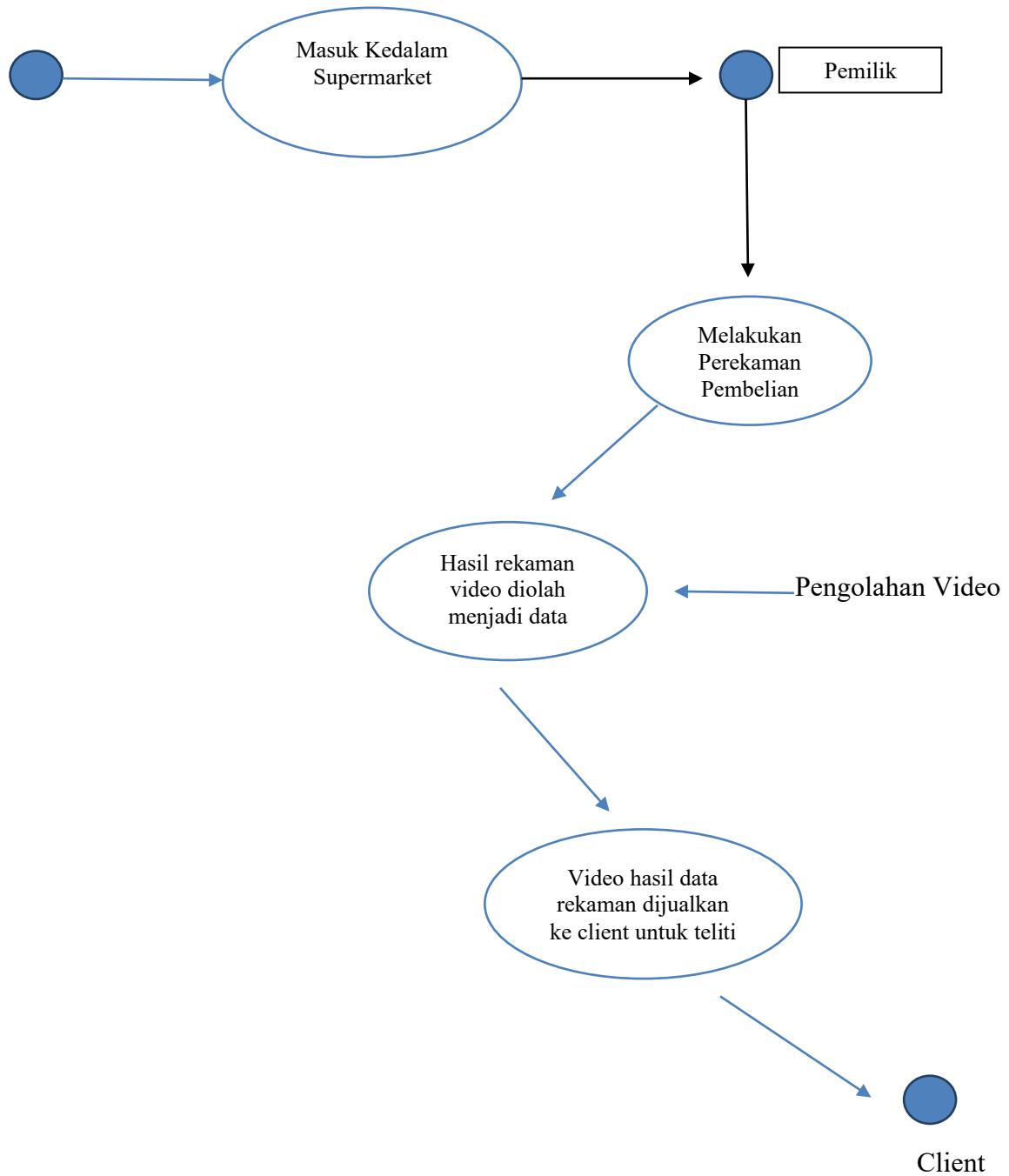
SYSTEM IMPROVEMENT OBJECTIVES	
<i>Objectives</i>	<i>Constraints</i>
<ol style="list-style-type: none"> 1. Mengembangkan sistem video mining untuk menganalisa perilaku konsumen/pembeli untuk meningkatkan penjualan 2. Optimasi pengembangan sistem 	<ol style="list-style-type: none"> 1. Sistem video mining yang dikembangkan harus tetap sesuai dengan kebijakan sehingga tidak mengganggu privasi konsumen. 2. Pengembangan system video mining tidak menganggu kenyamanan konsumen. 1. Pengembangan sistem yang baru harus tetap memudahkan perusahaan baik dari adaptasi penggunaan sistem maupun biaya penggunaan sistem

5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi problems, opportunities, dan directives.

Jenis Kebutuhan	Penjelasan
Kinerja (<i>Performance</i>)	<ul style="list-style-type: none"> - Proses Video mining dilakukan dengan cepat
Informasi (<i>Information</i>)	<ul style="list-style-type: none"> - Dapat melihat detail Prilaku Pelanggan - Mengukur persentase pembeli yang membeli dan persentase yang hanya melihat lihat - Data tersimpan dengan cepat dan rahasia
Segi Ekonomi (<i>Economic</i>)	<ul style="list-style-type: none"> - Biaya yang dibutuhkan untuk pengembangan sistem tidak melebihi <i>budget</i>
Pengontrolan Sistem (<i>Control</i>)	<ul style="list-style-type: none"> - Mengotentikasi <i>user</i> yang boleh menggunakan sistem sesuai dengan jabatannya. - Memiliki <i>backup data</i>, sehingga sistem lebih <i>reliable</i>. - Meningkatkan keamanan data yang bersifat privasi.

Efisiensi Sistem (<i>Eficiency</i>)	<ul style="list-style-type: none"> - Dengan menggunakan sistem Video Miners, maka akan memudahkan bagi perusahaan guna meningkatkan keuntungan dan meminimalisir penjualan produk yang tidak diminati pelanggan.
Pelayanan Sistem (<i>Service</i>)	<ul style="list-style-type: none"> - Memberikan data-data yang akurat dan lengkap. - Data yang ditampilkan harus mudah dibaca dan terstruktur. - Sistem harus <i>userfriendly</i>.

6. Susun dan gambarkan diagram *Use-Case Model*.



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.

- Pertama pembeli memasuki supermarket untuk membeli yang dibutuhkan.
- Lalu dilakukan perekaman video semua kegiatan pembeli yang dilakukan didalam supermarket.
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- Selanjutnya video hasil data rekaman dijualkan ke client untuk diteliti.
- Lalu terakhir client menerima data tersebut.

1. Masalah yang terjadi dan harus diselesaikan mengenai *video miners* tersebut adalah belum adanya undang-undang yang melarang/mengatur para peneliti untuk merekam para pembeli menggunakan kamera tersembunyi layaknya kamera keamanan. Para pembeli menganggap itu adalah hal yang ilegal. Tetapi para peneliti tersebut sudah menyepakati bahwa setelah penelitian itu selesai maka video itu akan dihapus. Disisi lain itu tidak dapat dipercaya, bisa saja menjadi arsip digital di dunia maya, yg sewaktu-waktu bisa menjadi boomerang bagi si pembeli. Jadi permasalahan yang utama disini adalah *privacy* para pembeli yang belum diatur secara hukum, jika sebuah toko/mal menggunakan kamera tersembunyi sebagai bahan penelitian mereka.

2. Selagi regulasi tentang penggunaan video sebagai bahan penelitian pembelian seorang pelanggan belum pasti, lebih baik supermarket menggunakan pola pembelian pelanggan saja dulu untuk mengetahui strategi marketing yang baik. Demi terlindunginya hak *privacy* pelanggan dan tidak menjadi boomerang bagi supermarket yang menggunakan ‘*video miners*’ tersebut. Karena jika supermarket memberitahu kepada pembeli bahwa mereka merekam aktifitas pembelanjaan mereka, pasti para pelanggan tidak terima hal itu.

3.

Cause and Effect Analysis		System Improvement Objectives	
Problem or Opportunity	Causes and Effects	System Objective	System Constraint
1. melakukan riset untuk mengetahui siapa yang berbelanja di sebuah toko dan apa yang mereka suka dengan menggunakan kamera tersembunyi	1. advokasi meminta untuk memberitahu pembeli bahwa terdapat kamera tersembunyi yang merekam aktifitas mereka, sedangkan pastinya para pelanggan tidak terima jika ada kamera tersembunyi yang merekam aktifitas perbelanjaan mereka 2. belum adanya regulasi hukum yang mengatur tentang hak privasi pelanggan dalam sistem ‘ <i>video miners</i> ’ 3. pelanggan takut video yang menyoroti wajahnya bisa saja disalahgunakan oleh orang yang tak bertanggung jawab	1. untuk mengetahui persentase pembeli dan persentase orang yang hanya melihat-lihat saja 2. mengetahui perbandingan orang yang memasuki toko dengan jumlah transaksi disetiap harinya 3. mengetahui lamanya pembeli mengantri dan melihat menu, serta dapat mendekripsi raut wajah, gerakan mata, kelompok usia, ras, dan jenis kelamin 4. proses penelitian hanya menggunakan komputer sehingga menjadi lebih cepat dalam proses pengolahannya 5. Setelah video selesai diteliti, maka video akan dihapus	1. sistem harus menciptakan keamanan data pelanggan dalam video tersebut 2. proses penelitian menjadi lebih cepat dibandingkan menggunakan mata manusia 3. kamera tersebut bisa digunakan sekaligus sebagai kamera keamanan

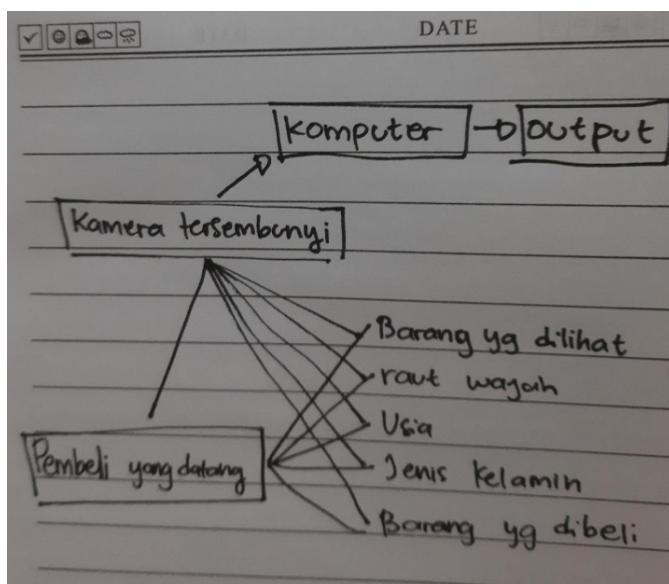
4. Constraints Matrix in using Video Miners

Constraint	Fixed	Flexible	Accept	Define as
Scope		x		Outcome
Time			x	External Deadlines
Cost			x	Team Capacity

5.

	Sistem Lama	Sistem Baru
Problems	membutuhkan waktu yang lama dalam meneliti minat belanja pelanggan	sistem dapat menghasilkan data minat belanja pelanggan hanya dengan mendeteksi si objek
Opportunities	harus membagikan selembaran form data minat pembelian barang atau melakukan interview dengan konsumen bisa saja pembeli tidak terlalu jujur dalam mengisi/menjawab form tersebut	dengan mendeteksi raut wajah dan pola pembelanjaan mereka, maka sistem akan menghasilkan data barang yang pembeli suka sehingga pemilik toko bisa melakukan strategi marketing yang sesuai
Directives	pembeli tahu bahwa dia menjadi objek penelitian dan dia menyetujui itu	penelitian menggunakan kamera tersembunyi sehingga pembeli tidak tau bahwa dia menjadi objek penelitian dan bisa saja mereka merasa itu ilegal

6.



7. Dalam proses penelitian ini manusia yang dibutuhkan hanyalah objek yang akan diteliti, karena sudah dideteksi oleh sistem yang telah diatur, perangkat yang digunakan adalah kamera tersembunyi dan komputer. Pertama kali dimulai ketika pembeli datang, maka kamera akan mendeteksi kedatangannya, lalu mendeteksi barang apa saja yang dilihatnya, raut/eksperesi wajahnya, usia, jenis kelamin, dan yang terakhir barang apa saja yang dia beli saat melakukan pembayaran dikasir. Lalu kamera tersebut menghubungkan dengan sistem yang telah ada di komputer yang terhubung, komputer tersebut mengklasifikasikannya menjadi sebuah data. Dan menghasilkan sebuah output data yang diinginkan, yaitu untuk mengetahui pelanggan yang datang dan barang apa yang mereka sukai.

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UTS

ADVANCED IS ANALYSIS AND DESIGN

KELAS MTI 19A

Dosen Pengasuh

M.Izman Herdiansyah,MM,PhD

Sabtu/17 April 2021

CASE:

'Video Miners' Use Cameras Hidden in Stores to Analyze Who Shops, What They Like
By JOSEPH PEREIRA Staff Reporter of THE WALL STREET JOURNAL

BRAINTREE, Mass. -- Stepping into a Gap store at the South Shore Shopping Plaza on a recent evening, Laura Munro became a research statistic. Twelve feet above her, a device resembling a smoke detector, mounted on the ceiling and equipped with a hidden camera, took a picture of her head and shoulders.

The image was fed to a computer and shipped to a database in Chicago, where ShopperTrak RCT Corp., a consumer research firm, keeps count of shoppers nationwide using 40,000 cameras placed in stores and malls.

ShopperTrak, whose profile has risen this holiday season as appetite grows for more real-time shopping data, is a leader in "video mining" -- an emerging field in marketing research enabled by technology that can analyze video images without relying on human eyes.

ShopperTrak says it doesn't take pictures of faces. The company worries that shoppers would perceive that as an invasion of privacy. But nearly all of its videotaping is done without the knowledge of the people being taped.

"I didn't even know there was a camera up there," says Ms. Munro, a public-transit manager who popped into the mall on her way home from work to find a gift for her 12-year-old daughter.

Using proprietary software to gauge the size of the images of people, a ShopperTrak computer determined that Ms. Munro was an adult, not a child, and thus a bona fide shopper. Weeding out youngsters is critical in accurately calculating one of the valuable bits of data ShopperTrak sells -- the percentage of shoppers that buys and the percentage that only browses. It arrives at this data, including the so-called conversion rate, by comparing the number of people taped entering the store with the number of transactions.

Ms. Munro's visit was tallied up twice: once as a visitor to the Gap and once in a national count of shoppers. Gap Inc., of San Francisco, pays ShopperTrak for the tally of Gap shoppers. ShopperTrak sells the broader data -- gleaned from 130 retail clients and 380 malls -- to economists, bankers and retailers.

ShopperTrak takes into account how much shoppers spend, data that it gets from credit-card companies and banks, and extrapolates outward to the entire retail landscape. "We can get sales and traffic figures that are identical to the government's, two months before they can issue their report," says Bill Martin, ShopperTrak's founder and president.

Of the millions of shoppers videotaped daily in the U.S., many are aware that security cameras are watching to detect shoplifting. In some cases, stores post signs to disclose such monitoring. But there is far less awareness by consumers that they are being filmed for market research.

ShopperTrak discloses its clients -- a list that includes Gap and its Banana Republic unit; Limited Brands Inc., of Columbus, Ohio, and its Victoria's Secret chain; Payless Shoe Source Inc., of Topeka, Kan; American Eagle Outfitters Inc., of Warrendale, Pa.; and Children's Place Retail Stores Inc., of Secaucus, N.J.

Several other research companies that videotape shoppers say they sign agreements with clients in which they pledge not to disclose their names. They say their clients want the taping to be secret -- and worry shoppers would feel alienated or complain of privacy invasion if they knew.

Katherine Albrecht, founder and director of Caspian, a Cambridge, Mass., consumer-advocacy group, says consumers

have "no idea such things as video tracking are going on" and should be informed. When she tells them about such activities, she says the response she often hears is, "Isn't this illegal, like stalking? Shouldn't there be a law against it?" There aren't any state laws forbidding retailers from videotaping shoppers for research -- although in New Jersey last week, Caesars Atlantic City Hotel Casino was fined \$80,000 for videotaping the breasts and legs of female employees and customers with cameras intended for security.

Some research companies' cameras, with lenses as small as a quarter, can provide data on everything from the density of shopping traffic in an aisle to the reactions of a shopper gazing at the latest plasma TV set. The cash register is a popular spot for cameras, too. But cameras can be found in banks, fast-food outlets and hotel lobbies (but not guest rooms).

Video miners say their research cameras are less invasive than security cameras, because their subjects aren't scrutinized as closely as security suspects. Images, they say, are destroyed when the research is done.

Robert Bulmash, founder of the Private Citizen Inc., of Naperville, Ill., which advocates for privacy rights, says that being in a retailer's store doesn't give a retailer "the right to treat me like a guinea pig." He says he wonders about assurances that images are destroyed, since there isn't any way to verify such claims. The pictures "could be saved somewhere in that vast digital universe and some day come back to haunt us," he says.

Already, video images can be subpoenaed from retailers for law-enforcement purposes. Technology capable of matching a photo with an individual's identity, say from credit-card transactions, "has certainly arrived," says Rajeev Sharma, a Penn State University computer science professor who has launched a company that is creating shopper-monitoring systems. It isn't certain whether retailers are availing themselves of the know-how. Credit card companies currently aren't sharing individuals' financial information with retailers, he adds, but retailers have their own customer databases as the result of loyalty cards, store credit cards and other in-house programs. Theoretically, they could link a transaction at a cash register with the face of a shopper appearing on the videotape.

Dr. Sharma's start-up, Advanced Interfaces Inc., of State College, Pa., is expected this week to launch a Web site, videomining.com, highlighting the company's patented "computer vision" technologies.

In a pilot project conducted last year in the Philadelphia area, Advanced Interfaces set up nine cameras in each of two McDonald's Corp. restaurants to find out which consumer types would find a new salad item most appealing. The research was done without consumers' knowledge, says Dr. Sharma, who is Advanced Interfaces' chief executive.

Seven of the cameras were already in place for security purposes and needed only to be reconfigured using Advanced's sensors. Two additional cameras were positioned in the ceiling directly over cash registers. By measuring the shapes of people's faces, the sensors were able to provide a breakdown of the fast-food customers by race, gender and age group, he says. The videos also revealed the length of time customers spent waiting in line or looking at the menu before ordering. Mr. Sharma declined to discuss the findings.

All of the video was subsequently destroyed, he says. "Only the computers and no humans saw the pictures of the customers," Mr. Sharma says. Advanced is conducting similar consumer-behavior analysis this holiday season for three other retailers that Mr. Sharma declined to identify.

Video mining is being spurred by digital video cameras. Unlike their analog counterparts, digital video cameras can be programmed so that the images can be quickly read by computers -- taking only hours to complete tasks that might have taken weeks for humans to do.

In a recent assignment that Kahn Research Group, of Huntersville, N.C., completed for American Express Co., computers took only a couple of days to sift through 64 hours of tape. Kahn researchers hid four cameras near the checkout counter at a couple of supermarkets in Southern California to study whether American Express gift cards should be displayed off in a spot by themselves, or lumped with competing brands near the cash registers.

Researchers were interested in customers' facial expressions and eye movements as they spotted the gift cards, and whether they walked to a display to pick up a card. Kahn cameras, each the size of a golf ball, were hidden behind the displays. The devices were programmed to detect fast-eye movement, smiles and frowns, says Greg Kahn, the company's CEO.

The research, which involved filming 2,000 shoppers, was "really not invasive," Mr. Kahn says. "Nobody knew they were being recorded and our work didn't interfere with the store environment. Had we tried to interview people, the process would have taken much longer."

And had people known they were being taped, he says, "I know many of the shoppers would have stuck their hands in front of the camera lens and refused to be recorded."

A spokeswoman for American Express described the project as a "pilot program ... that's not for public consumption" and declined to comment further.

It isn't clear whether the American public will be as tolerant of secret market research using videotape as they are of security cameras. There are 29 million cameras videotaping people in airports, government buildings, offices, schools, stores and elsewhere, according to one widely cited estimate in the security industry.

(Write to Joseph Pereira at joe.pereira@wsj.com)

Dari kasus diatas:

1. Sebutkan dan jelaskan masalah yang harus diselesaikan.

Jawaban :

- a. Kamera tersembunyi di supermarket (*video miners*) yang digunakan untuk menghitung jumlah konsumen, menganalisa produk yang dibeli konsumen dan statistik penjualan di supermarket diduga sebagai pelanggaran privasi dan pencurian data fisik secara ilegal.
- b. Konsumen dijadikan bahan riset dan bahan penelitian untuk mendeteksi strategi pasar di anggap menguntit atas ketidaknyamanan berbelanja di supermarket.

2. Apakah supermarket perlu menggunakan *video miners* seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

Jawaban :

Perlu, karena dapat membantu pengawasan supermarket dari pencurian yang sering terjadi dan juga membantu riset penjualan pada supermarket.

Implikasi strateginya dengan adanya *video miners*, perusahaan/supermarket dapat merencanakan banyaknya jumlah produk yang paling sering dibeli dan yang tidak agar dapat meningkatkan statistik penjualan secara efektif.

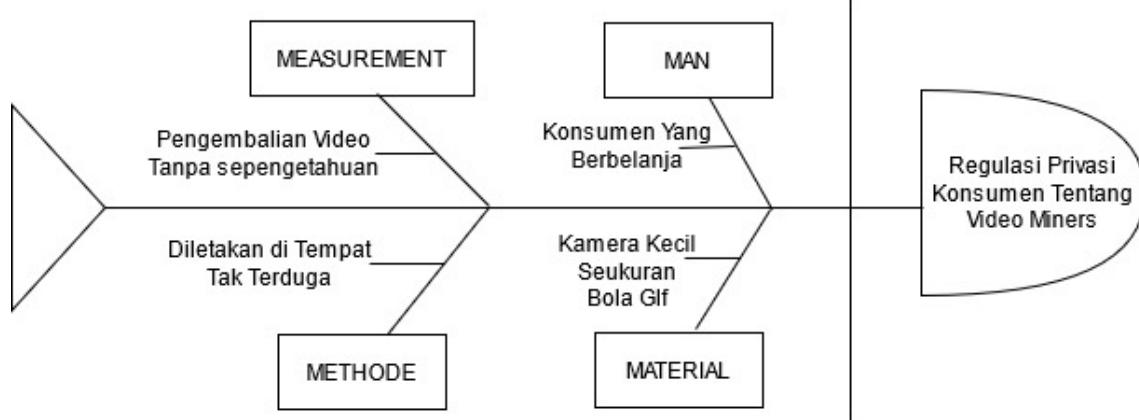
Peluangnya yaitu dapat mempermudah supermarket untuk mengetahui barang apa saja yang banyak dibeli konsumen, memprediksi barang yang lebih laku atau tidak, dan meningkatkan keamanan di supermarket dari bahaya kriminal seperti pencurian.

Ancaman yang bisa muncul yaitu adanya pihak pesaing menggunakan cara yang sama untuk memajukan usaha mereka, yang menyebabkan timbulnya persaingan antar supermarket. Dan kamera pengintai yang disisipkan di setiap sudut supermarket dapat membuat permasalahan pelanggaran privasi dikarenakan konsumen tidak tahu tentang hal itu.

3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems*, *opportunities*, dan *objectives* dari perlunya pengembangan sistem dilakukan.

Jawaban :

Berikut diagram Cause-effect-nya



4. Buat *Constraints Matrix*

Jawaban :

CAUSE AND EFFECTS ANALYSIS		SYSTEM IMPROVEMENT OBJECTIVES	
Problem or Opportunity	Cause and Effects	System Objectives	System Constraint
Pengambilan video untuk pengembangan sistem supermarket tanpa sepenuhnya mengetahui konsumen.	Menimbulkan masalah pelanggaran privasi konsumen dan ketidaknyamanan berbelanja, dan dikhawatirkan video yang direkam disalah gunakan oleh oknum yang tidak bertanggung jawab.	Diberikan sebuah kertas pemberitahuan atau papan pengumuman tentang pengambilan video serta maksud dan tujuan.	Sticker bergambar panah yang berisi tulisan "disini ada cctv" diletakkan bersebelahan dengan kamera.

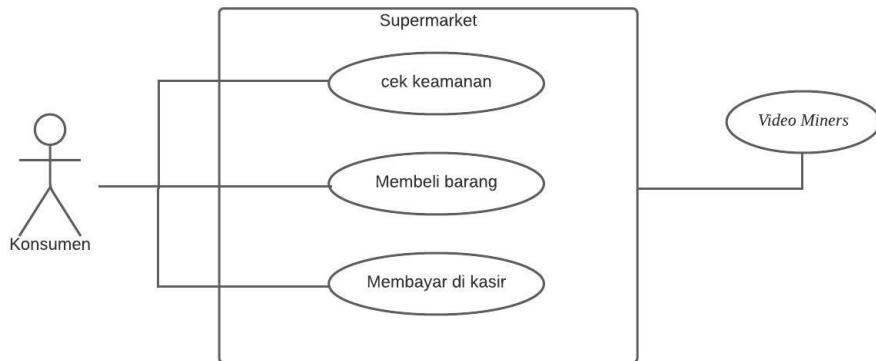
5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi problems, opportunities, dan directives.

Jawaban :

<i>Performance</i>	Throughput: Pengambilan data seperti produk terbanyak yang dibeli konsumen masih dilakukan dengan cara sembunyi-sembunyi, yaitu menggunakan <i>video miners</i> . Response Time: Pengambilan data lumayan cepat dikarenakan video yang telah direkam langsung disimpan kedalam sebuah folder yang ada di komputer perusahaan <i>video miners</i> .
<i>Information and Data</i>	Outputs: Informasi yang dihasilkan berupa rekaman video konsumen saat sedang berbelanja dan proses pembayaran di kasir. Inputs: Data dapat dikatakan ilegal dikarenakan proses pengambilan tidak diketahui konsumen. Stored Data: Data yang dihasilkan dari video langsung dihapus setelah penggunaan riset, agar tidak menyalahi aturan pelanggaran privasi konsumen.
<i>Economics</i>	Costs : Membutuhkan banyak biaya untuk riset karena hanya menggunakan kamera di setiap sudut supermarket.
<i>Control</i>	Penggunaan <i>video miners</i> kurang efektif dari segi keamanan, karena dikhawatirkan video yang direkam disalah gunakan oleh oknum yang tidak bertanggung jawab.
<i>Efficiency</i>	Mempermudah pengelola supermarket untuk menghitung produk yang paling banyak dibeli konsumen serta mempermudah pengawasan didalam supermarket.
<i>Service</i>	Berdasarkan hasil pengamatan, penggunaan <i>video miners</i> dapat membantu menghitung statistik penjualan lebih cepat dibandingkan dengan wawancara langsung dengan konsumen.

6. Susun dan gambarkan diagram *Use-Case Model*.

Jawaban:



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.

Jawaban :

Konsumen	: Membeli produk yang dibeli dan dibayar.
Supermarket	: Terdapat <i>video miners</i> disetiap sudut sebagai alat pengambilan data dan mengecek keamaan di dalam supermarket.
Cek Keamanan	: Konsumen diwajibkan untuk mengetahui bahwa ada kamera pengintai didalam supermarket beserta tujuan diletakan kamera tersebut.
Membeli Barang	: Informasi berupa produk apa saja yang dibeli oleh konsumen.
Membayar di Kasir	: Selama membayar, kamera merekam konsumen berdasarkan fisik dan gerak-geriknya agar jika terdapat pencurian dapat mudah dilacak.
<i>Video Miners</i>	: Semua hal yang direkam di supermarket akan tersimpan dan menjadi data riset.

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Some research companies' cameras, with lenses as small as a quarter, can provide data on everything from the density of shopping traffic in an aisle to the reactions of a shopper gazing at the latest plasma TV set. The cash register is a popular spot for cameras, too. But cameras can be found in banks, fast-food outlets and hotel lobbies (but not guest rooms).

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Already, video images can be subpoenaed from retailers for law-enforcement purposes. Technology capable of matching a photo with an individual's identity, say from credit-card transactions, "has certainly arrived," says Rajeev Sharma, a Penn State University computer science professor who has launched a company that is creating shopper-monitoring systems. It isn't certain whether retailers are availing themselves of the know-how. Credit card companies currently aren't sharing individuals' financial information with retailers, he adds, but retailers have their own customer databases as the result of loyalty cards, store credit cards and other in-house programs. Theoretically, they could link a transaction at a cash register with the face of a shopper appearing on the videotape.

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The research, which involved filming 2,000 shoppers, was "really not invasive," Mr. Kahn says. "Nobody knew they were being recorded and our work didn't interfere with the store environment. Had we tried to interview people, the process would have taken much longer."

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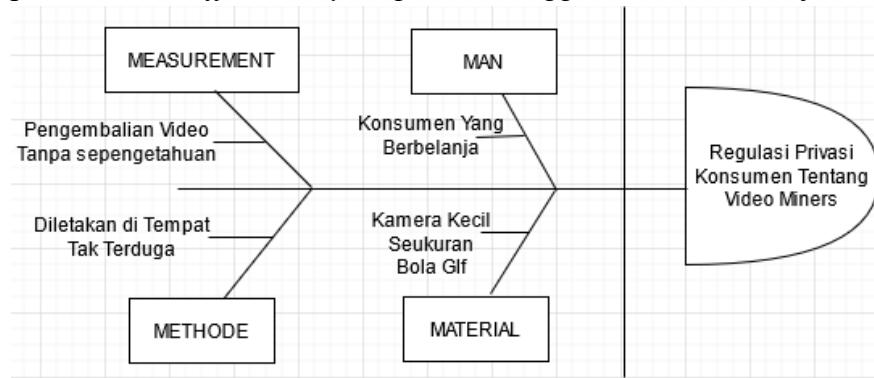
1. Sebutkan dan jelaskan masalah yang harus diselesaikan.
2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?
3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems, opportunities, dan objectives* dari perlunya proyek pengembangan sistem dilakukan.
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Selamat bekerja

Jawaban :

1. Masalah yang harus diselesaikan adalah :
 - Pemasangan video miners yang di gunakan untuk menganalisis pembeli dan statistic penjualan ditoko yang menghasilkan gambar,expresi, pergerakan pembeli ditoko membuat pembeli risi karena diduga mengganggu privasi.
 - Perusahaan video miners menjadikan bahan gambar riset nya menjadi database dan perjual-belikan kepada shopper Trak RCT Corp.
2. a. Perlu, karena dapat membantu supermarket mengetahui pencurian barang-barang ditoko tetapi ada baiknya tidak mengganggu privasi pembeli sehingga tidak membuat pembeli tidak nyaman..
b. implikasi strategi pesaing disupermarket yang di pasang video miners dapat mengetahui pangsa pasar dan barang apa saja yang di sukai dan diminati oleh pembeli, barang apa saja yang diminati dan barang apa saja yang paling laku.
c. Ya ada, Karena pesaing mungkin akan mengambil barang yang dijual dan membuat penjual menjual barang yg sama sehingga membuat persaingan antar supermarket terjadi. Dan juga ada baiknya supermarket memberikan diskon terhadap barang yang dijual sehingga dapat menarik pembeli dan memberikan pelayanan yang paling baik sehingga membuat pembeli nyaman dating ke toko/supermarket.

3. proses *Cause-Effect Analysis, problems, opportunities, dan objectives* :



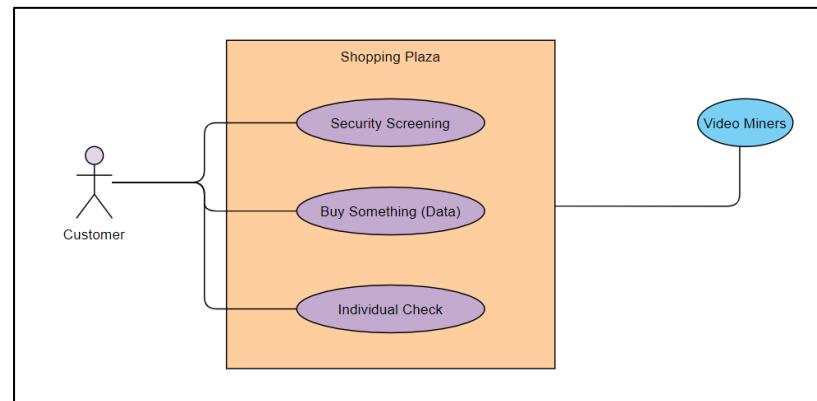
- 4.

CAUSE AND EFFECTS ANALYSIS		SYSTEM IMPROVEMENT OBJECTIVES	
Problem or Opportunity	Cause and Effects	System Objectives	System Constraint
Pengambilan video untuk pengembangan sistem supermarket tanpa sepengetahuan konsumen.	Menimbulkan masalah pelanggaran privasi konsumen.	Diberikan sebuah notifikasi atau papan pengumuman tentang pengambilan video serta tujuannya.	Kertas kecil seperti sticker diletakan bersebelahan dengan kamera.

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PIECES	
<i>Performance</i>	Throughput : Pengambilan data masih dilakukan dengan cara sembunyi-sembunyi sehingga membuat konsumen merasa terganggu dengan privasinya. Response Time : Proses gambar dapat dengan cepat dibaca oleh komputer hanya membutuhkan waktu berjam-jam untuk menyelesaikan tugas yang mungkin membutuhkan waktu berminggu-minggu untuk dilakukan manusia
<i>Information and Data</i>	Outputs : Proses yang dihasilkan kamera tidak sesuai dengan yang diharapkan karena terlalu banyak video yang didapat. Inputs : Video yang dihasilkan terlalu banyak sehingga membingungkan untuk dipilih dan dijadikan bahan riset. Stored Data : Data yang dihasilkan dari video tidak bisa disimpan lama karena dapat mengganggu privasi konsumen.
<i>Economics</i>	Costs : Banyaknya biaya yang perlukan untuk riset karena perlukan banyak cctv di supermarket
<i>Control</i>	Penggunaan video miners kurang efektif dari kamera keamanan, karena subjek tidak bisa diteliti lebih dekat dan setelah penelitian video dihapus.

<i>Service</i>	Dari pengamatan penggunaan video miners menghasilkan gambar lebih cepat dibandingkan menggunakan tenaga manusia.
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7. **Customer**, membeli sebuah barang ataupun memilih yang ingin ia beli, **Shopping plaza**, memiliki keamanan melalui video miners sehingga gerak gerik orang yang mencurigakan dapat di tangkap oleh video miners untuk mengamankan atau menyelamatkan customer maupun toko
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Nama : Ayu Okta Pratiwi

Nim : 202420065

Kelas : MTI 24 B

UTS

**ADVANCED IS ANALYSIS AND DESIGN
KELAS MTI 19A**

Dosen Pengasuh

M.Izman Herdiansyah,MM,PhD

Sabtu/17 April 2021

CASE:

**'Video Miners' Use Cameras Hidden in Stores to Analyze Who Shops, What They Like
By JOSEPH PEREIRA Staff Reporter of THE WALL STREET JOURNAL**

BRAINTREE, Mass. -- Stepping into a Gap store at the South Shore Shopping Plaza on a recent evening, Laura Munro became a research statistic. Twelve feet above her, a device resembling a smoke detector, mounted on the ceiling and equipped with a hidden camera, took a picture of her head and shoulders.

The image was fed to a computer and shipped to a database in Chicago, where ShopperTrak RCT Corp., a consumer research firm, keeps count of shoppers nationwide using 40,000 cameras placed in stores and malls.

ShopperTrak, whose profile has risen this holiday season as appetite grows for more real-time shopping data, is a leader in "video mining" -- an emerging field in marketing research enabled by technology that can analyze video images without relying on human eyes.

ShopperTrak says it doesn't take pictures of faces. The company worries that shoppers would perceive that as an invasion of privacy. But nearly all of its videotaping is done without the knowledge of the people being taped.

"I didn't even know there was a camera up there," says Ms. Munro, a public-transit manager who popped into the mall on her way home from work to find a gift for her 12-year-old daughter.

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Selamat bekerja

Jawab

1. masalah yang harus diselesaikan adalah

- Ada kamera tersembunyi di toko (video miners) yang digunakan untuk menganalisa pembeli, dan statistik penjualan di suatu toko, menganalisa ekspresi pergerakan saat seseorang melakukan sesuatu di toko tetapi diduga sebagai pelanggaran privasi dan pencurian data secara ilegal.
- Ada toko yang dilangit nya di pasang kamera tersembunyi untuk mengambil gambar. Data gambar tersebut dijadikan database untuk dikirim dan dijual belikan ke shopper Trak RCT Corp di Chicago.
- Shopper Trak RCT perusahaan firma riset konsumen memasang 40.000 kamera yang di tempatkan di toko dan mall tanpa sepengetahuan pembeli yang sedang melihat-lihat / berbelanja di tempat tersebut, sangat kamera tersebut dikenakan sangsi pelanggaran privasi.
- Shopper Trak menjual data dari 130 client ritel dan 380 mall ke pada ekonom, bankir dan pengecer untuk data tersebut dijadikan bahan analisa kebiasaan berbelanja profil peribadi seseorang. Data tersebut seperti seberapa sering pembeli berbelanja, ataupun data kartu kredit dan bank digunakan pembeli.
- Konsumen dijadikan bahan riset pasar dan dijadikan bahan penelitian mendeteksi strategi pasar itu ilegal dan dianggap menguntit atas ketidaknyamanan SOP berbelanja di toko maupun mall tersebut. seharusnya ada pengumuman dan di beritahukan jika toko tersebut di pasangi kamera pengintai yang dijadikan video miners atau ada nya permintaan izin dari toko jika di rekam karena ada beberapa pembeli yang tidak mempermasalahkan dan tidak menyadari jika ada video miners yang di taruh di langit – langit toko
- Kamera penambang (video miners) kurang invasif daripada kamera keamanan perusahaan. Karena kamera tersebut dapat mendeteksi ekspresi dan pergerakan saat seseorang melakukan sesuatu.

2. Apakah supermarket perlu menggunakan video miners seperti pesaing?

- ya, perlu. Ada baiknya supermarket memasang video minner juga tetapi harus dengan konfirmasi apakah pembeli sudah tahu dan setuju jika mata dan wajahnya terdeteksi untuk

disimpan sebagai database dan dijadikan bahan analisa oleh supermarket. karena video miner yg membawa dampak positif dan keuntungan bagi perusahaan supermarket.

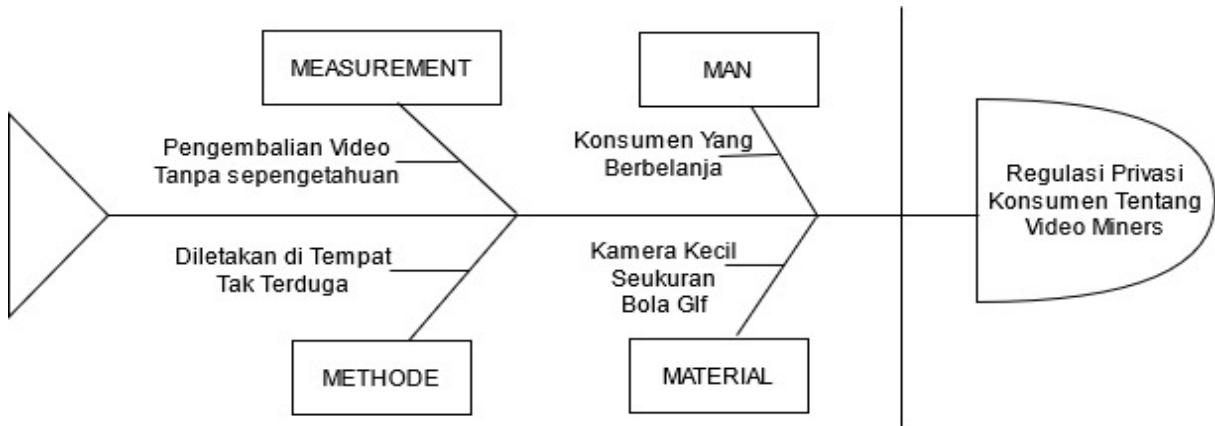
Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini?

- implikasi strategi pesaing adalah supermarket yg dipasangi video miner akan lebih bisa melihat pangsa pasar, tau apa saja barang apa yg sedang disukai oleh orang-orang. model barang apa yg bnyak peminatnya. apa yg paling laku dibeli dan juga pihak pesaing jadi tau dan dpt mengambil data pembeli, apa yg mereka butuhkan dan inginkan.

Apakah ada peluang dan ancaman yang muncul?

- Ya, ada peluang dan ancaman yang muncul yaitu pihak pesaing juga akan mengambil dan menjual barang yg sama karena telah menganalisa dan mengetahui barang apa saja yg lebih laku. akhirnya barang yg dijual sama dan dapat menimbulkan persaingan antar supermarket. selain itu, seharusnya supermarket jd menawarkan kelebihan tertentu seperti potongan harga atau dari segi pelayanan sehingga dapat menjadi nilai lebih dihadapan konsumen. konsumen Dapat memilih toko/supermarket yg ingin ia pilih untuk dikunjungi.

3.



4.

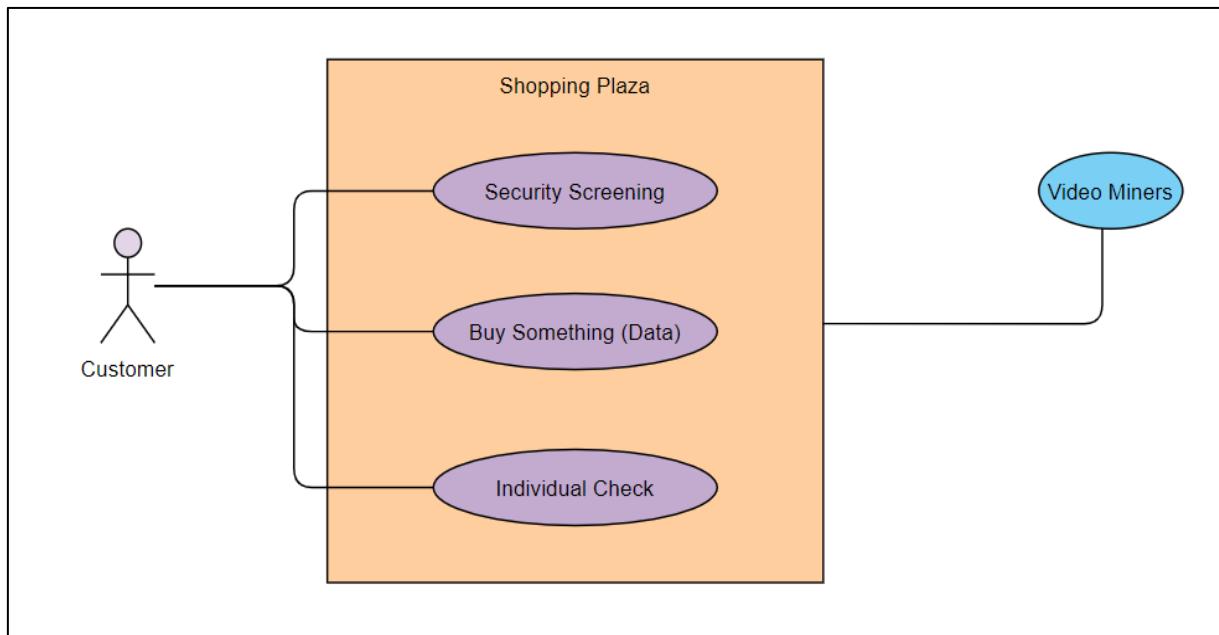
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5.

PIECES

<i>Performance</i>	Throughput : Pengambilan data masih di lakukan dengan cara sembunyi-sembunyi sehingga membuat consument merasa terganggu dengan privasinya. Respone Time: Proses gambar dapat dengan cepat dibaca oleh komputer hanya membutuhkan waktu berjam-jam untuk menyelesaikan tugas yang mungkin membutuhkan waktu berminggu-minggu untuk dilakukan manusia
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<i>Economics</i>	Costs : Banyaknya biaya yang perlukan untuk riset karena di perlukan banyak cctv di supermarket
<i>Control</i>	Penggunaan video miners kurang efektif dari kamera keamanan, karena subjek tidak bisa diteliti lebih dekat dan setelah penelitian video di hapus.
<i>Service</i>	Dari pengamatan penggunaan video miners menghasilkan gambar lebih cepat dibandingkan menggunakan tenaga manusia.

6.



- 7.
- **Customer**, membeli sebuah produk ataupun memilih yang ingin ia beli.
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Bahrul Mufliansyah

202420052

UTS

ADVANCED IS ANALYSIS AND DESIGN

KELAS MTI 19B

Dosen Pengasuh

M.Izman Herdiansyah,MM,PhD

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Dari kasus diatas:

1. Sebutkan dan jelaskan masalah yang harus diselesaikan.

ShopperTrak RCT Corp sebuah perusahaan penelitian konsumen, menghitung pembeli secara nasional menggunakan 40.000 kamera yang ditempatkan di toko dan mal. ShopperTrak berkembang dalam penelitian pemasaran yang diaktifkan oleh teknologi yang dapat menganalisis gambar video tanpa mengandalkan mata manusia. ShopperTrak memperhitungkan berapa banyak pembelian yang dibelanjakan, data yang didapatkannya dari perusahaan kartu kredit dan bank, dan diekstrpolasi ke luar ke seluruh lanskap ritel.

- Kamera yang digunakan supermarket kurang invasif daripada kamera keamanan, karena subjek mereka tidak diteliti sedekat tersangka keamanan.
- Konsumen berasumsi bahwa dengan adanya kamera di dalam toko tersebut mereka sedang direkam untuk pembuatan film untuk penelitian pasar.
- Privasi dari pembeli terekspose ke public akibat dari penambangan video tersebut, dan tidak ada kepastian untuk pembeli bahwa video tersebut benar-bnay dihancurkan dan tidak tersebar.

2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

- Tentu perlu, guna meningkatkan keuntungan dan meminimalisir penjualan produk yang tidak diminati pelanggan. Video miners juga dipasang guna untuk mempermudah perusahaan memantau konsumen nya, terutama di bagian keuangan.

Dan juga dapat dengan mudah memperhitungkan berapa banyak pembelanja yang dibelanjakan dan banyaknya pelanggan.

- Ancamannya adalah Ketika data pribadi dari seorang pelanggan ternyata tersebar, bisa saja pihak supermarket akan dikenakan denda akibat dari penambangan video yang tidak diketahui pembeli mengakibatkan menjadi sebuah pelanggaran privasi dari pembeli.
3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems*, *opportunities*, dan *objectives* dari perlunya proyek pengembangan sistem dilakukan.

<i>Problem or Opportunity</i>	<i>Causes and Effects</i>	<i>Objectives</i>
1. Rekaman video dilakukan tanpa sepengetahuan orang-orang yang direkam. 2. Jika pembeli tahu tentang analisis ini bisa saja pihak supermarket akan mendapatkan complain dari pembeli.	1. Konsumen merasa pelanggaran privasi. 2. Pihak supermarket bisa mengetahui pasar agar bisa meminimalisir kerugian.	1. Rekaman video konsumen tidak mengungkapkan nama mereka dan rekaman itu menjadi rahasia. 2. Riset tujuan.

4. Buat *Constraints Matrix*

SYSTEM IMPROVEMENT OBJECTIVES	
Objectives	Constraints
<p>1. Meningkatkan efisiensi sistem pencatatan pemasukan stock dan konsumen</p> <p>2. Optimasi <i>entry</i> data barang sehingga tidak perlu dilakukan pencatatan berulangkali</p>	<p>1. Sistem baru yang dikembangkan harus tetap sesuai dengan kebijakan yang berlaku di Supermarket</p> <p>2. Pengembangan sistem yang baru harus tetap memudahkan perusahaan sehingga para pengguna sistem tidak membutuhkan waktu yang lama untuk beradaptasi dengan sistem yang baru</p>

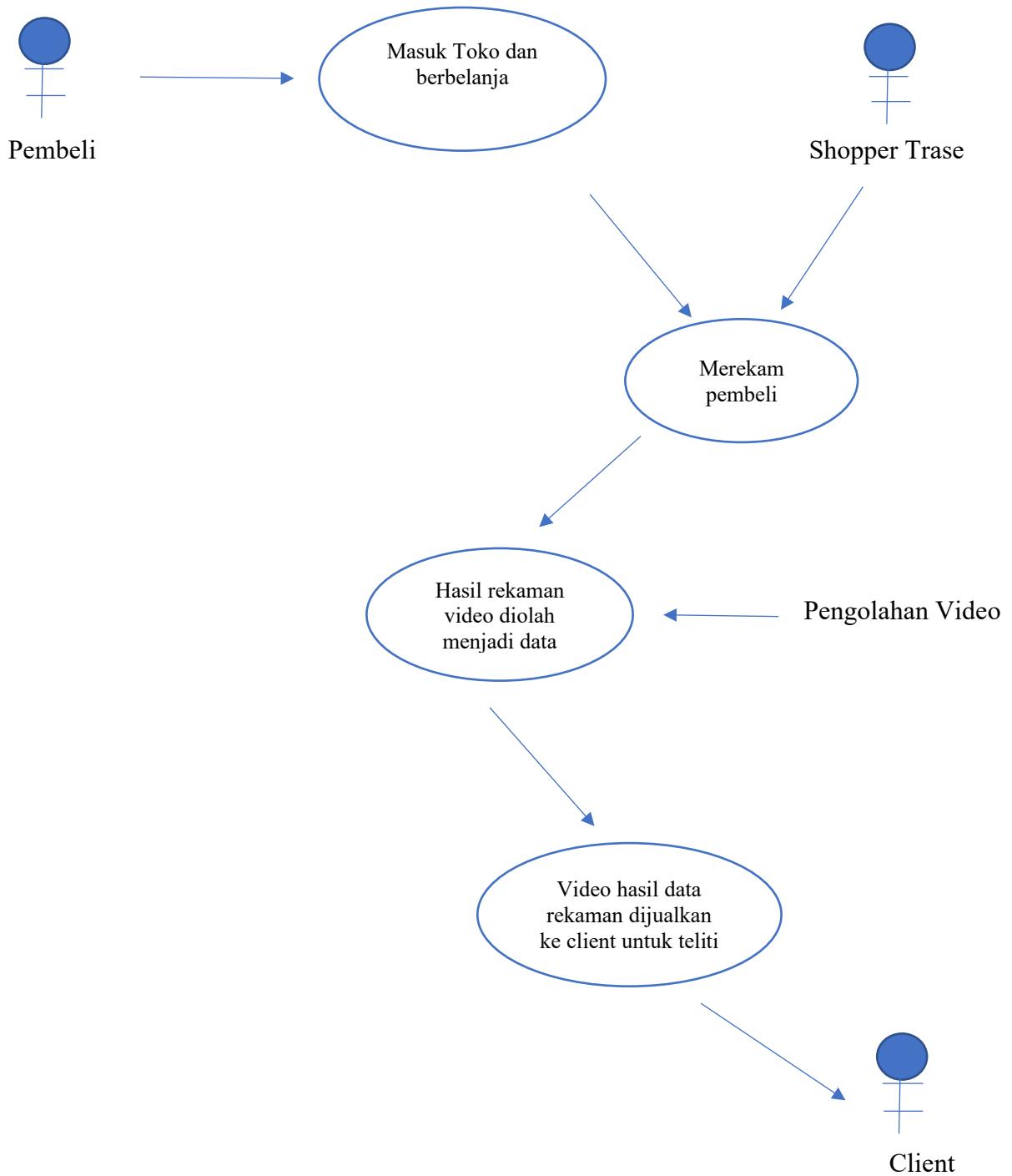
5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi problems, opportunities, dan directives.

Jenis Kebutuhan	Penjelasan
Kinerja (<i>Performance</i>)	<ul style="list-style-type: none"> - kamera video digital dapat diprogram sehingga gambar-gambar dapat dibaca dengan cepat oleh komputer.
Informasi (<i>Information</i>)	<ul style="list-style-type: none"> - Data tersimpan dengan cepat dan rahasia - Dapat melihat detail pada ekspresi wajah dan pergerakan mata pelanggan - Mengukur persentase pembeli yang membeli dan persentase yang hanya browses

Segi Ekonomi (<i>Economic</i>)	<ul style="list-style-type: none"> - Biaya yang dibutuhkan untuk pengembangan sistem tidak melebihi <i>budget</i> yang sudah ditentukan.
Pengontrolan Sistem (<i>Control</i>)	<ul style="list-style-type: none"> - Mengotentikasi <i>user</i> yang boleh menggunakan sistem sesuai dengan jabatannya. - Memiliki <i>backup data</i>, sehingga sistem lebih <i>reliable</i>. - Meningkatkan keamanan data yang bersifat privasi.
Efisiensi Sistem (<i>Efficiency</i>)	<ul style="list-style-type: none"> -
Pelayanan Sistem (<i>Service</i>)	<ul style="list-style-type: none"> - Memberikan data-data yang akurat dan lengkap. - Data yang ditampilkan harus mudah dibaca dan terstruktur. - Sistem harus <i>user friendly</i>.

6. Susun dan gambarkan diagram *Use-Case Model*.

Perekaman Video :



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.
- Pertama pembeli memasuki supermarket untuk membeli yang dia butuhkan.

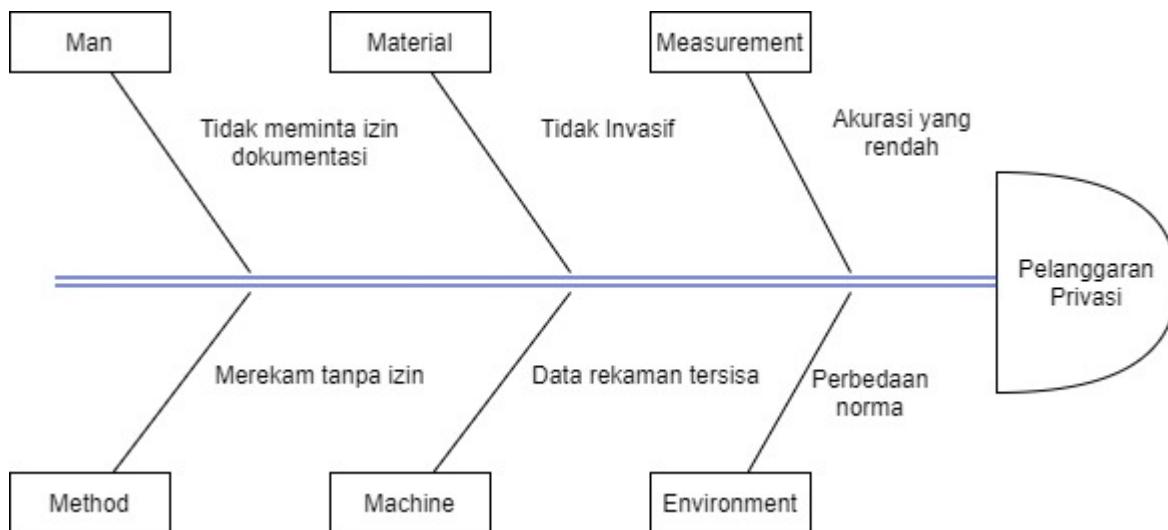
- Lalu shopper trase merekam video semua kegiatan pembeli yang dilakukan didalam supermarket.
- Dilanjutkan hasil rekaman video diolah menjadi data pembeli.
- Selanjutnya video hasil data rekaman dijualkan ke client untuk diteliti.
- Lalu terakhir client menerima data tersebut.

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UTS

1. Sebutkan dan jelaskan masalah yang harus diselesaikan.
 - Pelanggaran privasi, pelanggaran ini disebabkan karena pengambilan video yang dilakukan secara diam-diam tanpa seizin orang yang dijadikan objek penelitian.
2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?
Supermarket perlu menggunakan video miners seperti pesaing. Implikasi strategis pada perusahaan yang menggunakan video miners adalah dapat membantu perusahaan dalam menentukan strategi penjualan baik dari sisi varian produk atau segmen pasarnya. Peluang yang muncul berupa peningkatan omset penjualan dari supermarket dan ancaman yang muncul berupa sanksi hukum apabila pelanggan tidak bersedia dirinya dijadikan objek penelitian.
3. Lakukan proses *Cause-Effect Analysis*, dan tulis serta jelaskan apa *problems*, *opportunities*, dan *objectives* dari perlunya proyek pengembangan sistem dilakukan.

Permasalahan: Tuntutan hukum atas pelanggaran privasi



Problems:

- Tuntutan hukum atas pelanggaran privasi

Opportunities:

- Meningkatkan omset penjualan produk
- Meningkatkan daya saing

Objectives :

- Untuk mengetahui minat konsumen terhadap suatu produk dan frekuensi pembelian

4. Buat *Constraints Matrix*

Constraint	Fixed	Flexible	Accept
Scope	X		
Time	X	X	
Cost	X	X	X

5. Gunakan kerangka kerja PIECES untuk menyusun dan mengklasifikasi problems, opportunities, dan directives.

1. Analisis Kinerja Sistem (Performance)

System tidak dapat memastikan berapa banyak data yang dapat dikumpulkan karena tergantung pada kunjungan pembeli.

Waktu yang dibutuhkan cukup lama karena dengan satu kali kunjungan belum tentu dapat diputuskan seorang pembeli itu akan sering belanja atau hanya satu kali saja.

2. Analisis Informasi (Information)

A. Output

- 1.Kurangnya informasi yang relevan dan diperlukan
- 2.Kelebihan Informasi
- 3.Informasi dalam bentuk frmat yang tidak berguna
- 4.Informasi tidak akurat

B. Input

1. Data tidak dapat di-capture
2. Data tidak di-capture secara akurat - terdapat error
3. Data di-capture secara berlebihan - data yang sama dicapture lebih dari sekali
4. Data ilegal di-capture

C. Data Tersimpan

- 1.Data disimpan secara berlebihan dalam banyak file
- 2.ltem-item data sama memiliki nilai-nilai berbeda, dalam file-flle berbeda
- 3.Data tersimpan tidak akurat

3. Analisis Ekonomi (Economy)

Biaya

1. Biaya tidak diketahui
2. Biaya tidak dapat dilacak ke sumber
3. Biaya terlalu tinggi

Keuntungan

1. Pasar-pasar yang baru dapat dieksplorasi
2. Pemasaran saat ini dapat diperbaiki
3. Pesanan-pesanan dapat ditingkatkan

4. Analisis Pengendalian (Control)

Kontrol Keamanan Lemah

1. Adanya potensi kejahatan
2. Adanya potensi pelanggaran Etika dan privacy
3. Data tersimpan secara berlebihan
4. Error pembuatan keputusan terjadi

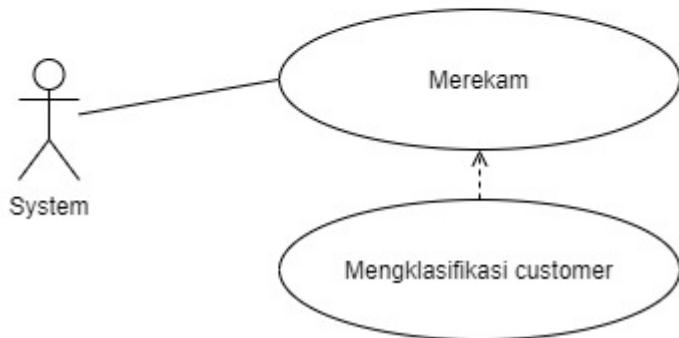
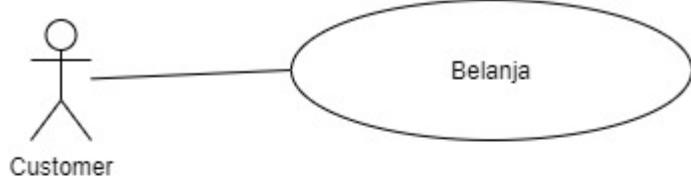
5. Analisis Efisiensi (Efficiency)

1. Penggunaan komputer, orang atau mesin membuang waktu
2. Penggunaan komputer, orang atau mesin membuang material

6. Analisis Pelayanan (Service)

1. Sistem menghasilkan produk yang tidak akurat atau tidak konsisten ataupun tidak dapat terpercaya
2. Sistem tidak mudah dipelajari atau tidak mudah digunakan
3. Sistem tidak fleksibel untuk berubah

6. Susun dan gambarkan diagram *Use-Case Model*.



7. Susun dan jelaskan dokumentasi tertulis proses dan diagram *Use-Case*. Lakukan asumsi untuk proses interview-nya jika diperlukan.

- Customer datang
- Sistem merekam aktifitas customer
- Sistem mengklasifikasikan data dan karakter customer

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1. sebutkan dan jelaskan masaah yang harus di selesaikan

"ini adalah riset percobaan tentang evaluasi dan keinginan pembeli untuk membeli suatu produk menggunakan kamera yang di tempatkan di toko menggunakan aplikasi (shooper track) dengan hasil videonya maka perusahaan dapat mengetahui lebih banyak data belanja real time atau persentase setiap konsumen,hasilnya juga dapat mengetahui kepuasan,keinginan seorang konsumen,kebiasaan konsumen berbelanja suatu barang

Tapi disini juga terdapat masalah karena perusahaan khawatir konsumen akan menganggapnya sebagai pelanggaran privasi meskipun videonya di ambil tanpa sepengetahuan konsumen dan mereka juga berfikir kamera yang terpasang hanya untuk kamera keamanan saja padahal kamera tersebut di gunakan untuk riset pembeli "

2. Apakah supermarket perlu menggunakan video miners seperti pesaing?apa implementasi strategi pada perusaahan sebagai akibat strategi pesaing ini ? apakah ada peluang ancaman yang muncul ?

"Jika saya adalah perusahaan itu maka saya wajibkan untuk memasang kamera tersebut, karena disini saya akan mendapat kan informasi yang sangat berharga tentang kebiasaan konsumen dalam berbelanja dan itu berdampak sangat besar dalam penjualan barang di perusahaan saya.

Strateginya adalah dengan mengumpulkan data sebanyak banyaknya dari hasil rekaman tersebut kemudian kita olah menjadi persentase data untuk menghasilkan suatu informasi yang kita perlukan

Untuk peluang ancaman saya kira pasti ada, makanya dalam menerapkan suatu strategi harus matang dan juga memperhatikan aspek hukum yang berlaku."

3. Lakukan Proses Couse-Effect Analysisi, dan di tulis serta jelaskan apa problems, opportunities dan objecitives dari perlunya proyek pegembangan system di lakukan.

"Couse and Effect digunakan untuk mengidentifikasi dan menunjukan hubungan antara sebab dan akibat agar dapat menemukan akar penyebab dari suatu permasalahan

Jadi berdasarkan dari cerita soal sebetulnya masalahnya adalah perusahaan ingin mengetahui keinginan dari pembeli

Dalam teknologi yang canggih saat ini untuk mengetahui keinginan dari konsumen ada banyak metode dan berdasarkan jurnal diatas yang di tawarkan adalah menggunakan kamera yang dimana pelaksanaanya bebar benar tidak invasive tidak ada yang tahu itu di rekam mengumpulkan data data yang perlu sebagai persentase keinginan pembeli dan yang lebih hebat lagi tidak mengganggu linkungan toko bayangkan jika mencoba pengambilan data secara manual pasti banyak kendala dari segi waktu saja sudah membutuhkan waktu yang lebih lama.

Itulah contoh pengembangan system yang terjadi di lapangan secara langsung, hanya menggunakan kamera kita dapat mengetahui keiiginan konsumen hanya menyimpulkan dari kebiasaan pembeli menggunakan teknologi yaitu kamera

4. Buat Constrains Matrix

<i>Couse and Effect Analysis</i>		<i>System Improvement Objectives</i>	
<i>Problem or Opportunity</i>	<i>Couse and Effects</i>	<i>System Objective</i>	<i>System Constraint</i>

5. Gunakan Kerangka Kerja PIECES untuk menyusun dan mengklasifikasi problems opportunities, dan directives

A. Performance

- *Throughput*

Sistem Analisis Perilaku konsumen atau jumlah orang yang berbelanja dibandingkan hanya melihat-lihat produk saja dilakukan secara manual oleh pegawai toko.

- *Response Time*

Proses pencatatan untuk setiap analisis perilaku konsumen didasarkan pada kuesioner atau melalui transaksi pembelian membutuhkan waktu 10-15 menit, dan waktu antrian antara satu orang dan yang lain membutuhkan waktu 3 menit. Antrian yang panjang dan proses pencatatan yang lama dapat menyebabkan kurang efisien dan terkesan kurang profesional.

B. Information and Data

- *Output*

Informasi yang dihasilkan dalam kuesioner atau bukti transaksi pembelian tidak sesuai yang diinginkan. Contohnya informasi data kuesioner pembeli akan memberikan data yg tidak sebenarnya karena takut identitasnya diketahui dalam pengisian angket kuesioner begitupun data transaksi pembelian perlu direkap kembali untuk menganalisa datanya.

- *Input*

Pada sistem lama proses pengolahan data kuesioner menggunakan form yang perlu dilakukan beberapa tahap untuk menganalisa begitupun transaksi pembelian hanya diinput di mesin kasir. Hal ini dapat memberikan informasi yang kurang akurat karena kesalahan dalam penulisan. Sehingga informasi bisa menyesatkan penerima informasi.

- *Stored Data*

Penyimpanan data seperti form kuesioner atau bukti transaksi pembelian disimpan tidak terintegrasi dan data tidak fleksibel untuk pemenuhan informasi data baru

C. Economics

Costs

Banyak memakan biaya karna tidak terintegrasi data perlu pemindahan data dulu dalam menganalisa data dan perangkat yang digunakan berbeda beda.

D. Control

Tidak adanya pembatasan hak akses terhadap informasi yang ada. Lemari penyimpanan berkas dikunci dengan gembok kecil saja, sehingga orang lain dengan mudah membongkar dan mengakses informasi.

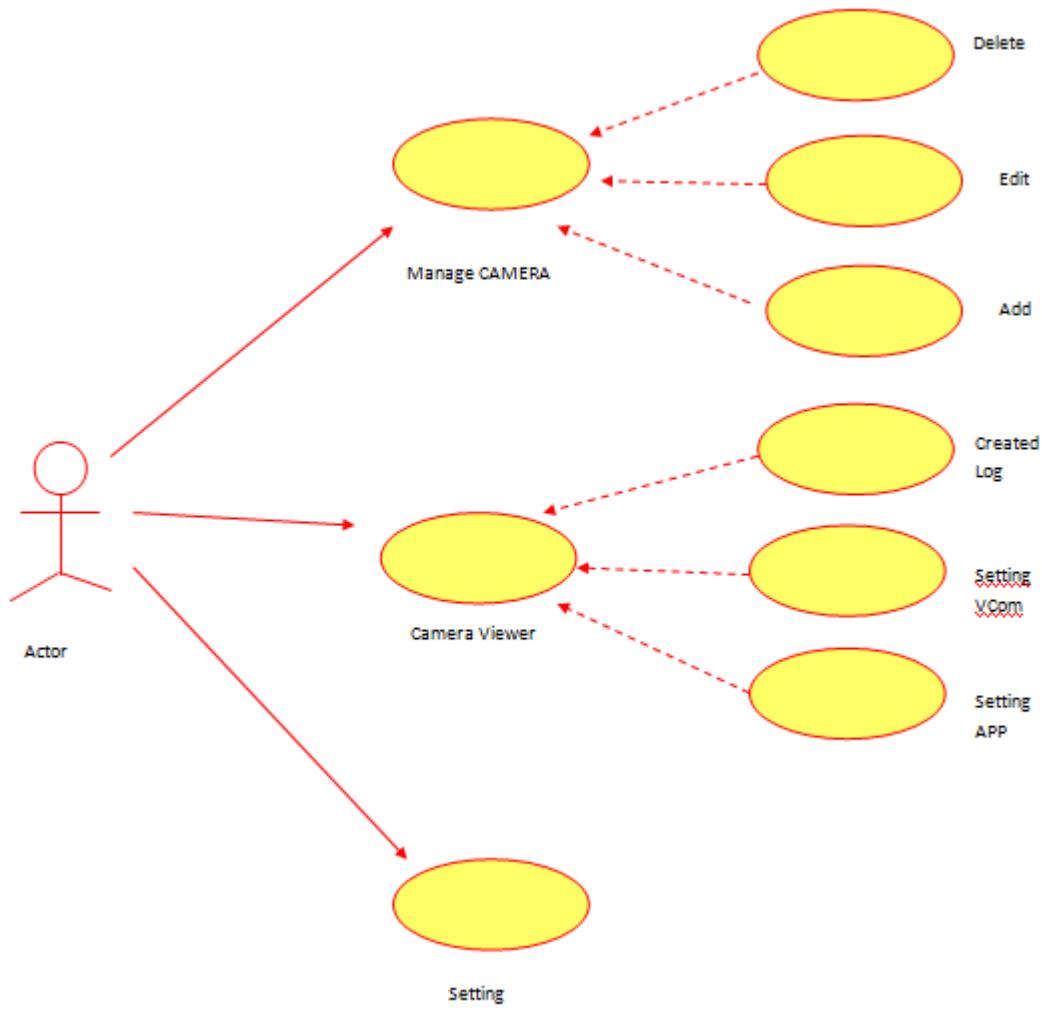
E. Efficiency

Penggunaan kertas yang digunakan sebagai data atau dokumen terlalu banyak menyebabkan dokumen tertumpuk dan tidak tersusun rapi. Sehingga membutuhkan waktu yang lama agar dapat menemukan satu laporan atau pembukuan yang ingin dicari.

F. Service

Berdasarkan hasil pengamatan Analis Perilaku Pelanggan atau jumlah orang yang berbelanja memakan waktu lama dan kurang efisien, disebabkan karena data diambil dari kuesioner atau transaksi pembelian tidak secara otomatis melalui video yang direkam.

6. Susun dan Gambarkan Use-Case Model



7. Susun dan Jelaskan dokumentasi tertulis proses dan diagram Use-Case. Lakukan asumsi untuk proses interviewnya jika diperlukan.

UTS

ADVANCED IS ANALYSIS AND DESIGN KELAS MTI 19A

Dosen Pengasuh
M.Izman Herdiansyah,MM,PhD
Sabtu/17 April 2021

1. Permasalahan yang harus diselaikan?

- Pembuatan undang-undang tentang tracking video dan hidden kamera agar proses ini menjadi legal untuk dilakukan.
- Camera yg disebarluaskan di super marker merupakan hidden kamera atau kamera tersembunyi yg tidak diketahui oleh konsumen, sehingga apabila konsumen tau maka akan timbul penolakan dari konsumen
- Maka dari itu perusahaan melakukan perjanjian dengan klien dimana mereka berjanji tidak akan menyebarkan identitas mereka,

2. Apakah supermarket perlu menggunakan video miners seperti pesaing? Apa implikasi strategis pada perusahaan sebagai akibat strategi pesaing ini? Apakah ada peluang dan ancaman yang muncul?

- Menurut sudut pandang bisnis supermarket perlu menggunakan video miners untuk kemajuan usahanya,
- Implikasi strategis yg terjadi akibat strategi pesaing adalah berkurangnya atau hilangnya pelanggan akibat proses yg dilakukan secara diam-diam diketahui konsumen karna mereka akan menganggap ini sebagai pelanggaran privasi atau pengambilan data konsumen secara ilegal
- Peluang yg akan muncul adalah supermarket dapat membaca atau mengetahui konsumen mana yg akan membeli dan apa yg mereka beli, serta konsumen yang hanya melihat-lihat saja,
- Ancaman yg akan muncul adalah penolakan pengambilan data visual yg secara diam-diam oleh supermarket

3.

CAUSE AND EFFECT ANALYSIS		SYSTEM IMPROVEMENT OBJECTIVES	
Problem or Opportunity	Causes and Effects	System Objective	System Constraint
1. Perekaman vidio yg dilakukan sistem shoperTrak tanpa sepengetahuan pelanggan	1. Proses ini dikhawatirkan adalah pelanggaran privasi	Membantu toko untuk menganalisa para calon pembeli	Sistem yang dibuat untuk menganalisa seseorang yg masuk ketoko dan apa yg mereka ingin beli atau suka

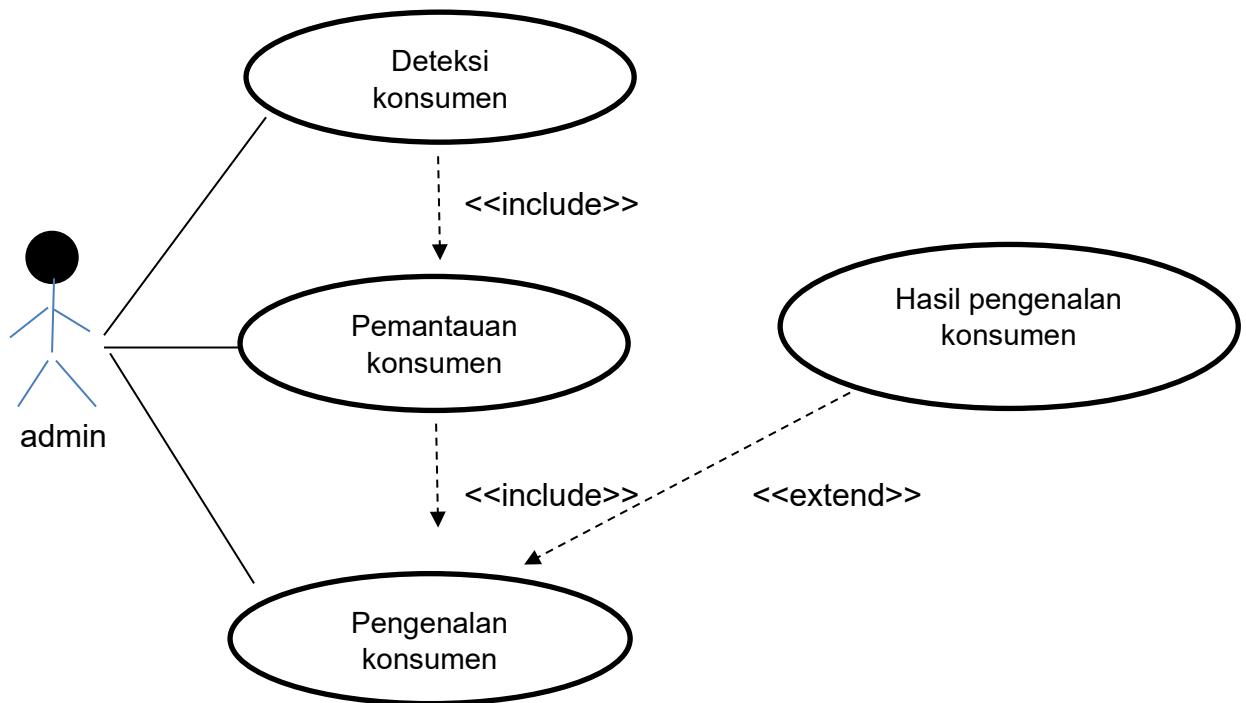
4. Constraints Matrix

SYSTEM IMPROVEMENT OBJECTIVES	
System Objective	System Constraint
Membantu toko untuk menganalisa konsumenya	Sistem yang dibuat untuk mempelajari atau menganalisa calon pembeli ditoko, untuk menentukan siapa yang akan membeli dan apa yang akan mereka beli.

5. PIECES

PIECES	Sistem lama	Sistem baru
Performance	- Analisa yg dilakukan oleh manusia masih kurang efektif dan akurat dalam mengamati setiap pengunjung	- Dengan video miners proses analisa menjadi lebih mudah dan tepat
Information	- informasi yang didapat dari manusia masih kurang akurat dalam menganalisa calon pembeli	- informasi dari video miners lebih tepat dan akurat dalam membaca prilaku konsumen -
Economic	- Pengolahan secara manual dengan waktu yang lama dapat meningkatkan biaya operasional.	- Pengolahan data dengan sistem menjadi lebih efisien waktu dan biaya karyawan juga menurun
Control	- Pengendalian pengolahan data dan control pelanggan masih manual jadi tidak akan memberikan hasil optimal -	- Pengendalian control melalui sistem memberikan informasi dan hasil yg lebih optimal
Efficiency	- Beban kerja yang ditimbulkan lebih banyak, seperti proses pengawasan oleh karyawan secara manual	- Dengan adanya sistem video miners dapat mengurangi beban kerja karyawan karena digantikan oleh sistem
Service	- Pelayanan yang diberikan kepada pelanggan yg mungkin kurang optimal	- Pelayanan yang diberikan kepada pelanggan menjadi lebih tepat karena supermarket dapat membaca konsumen

6. Usecase model



7. Dokumentasi tertulis *Use Case*

No	Nama Use Case	Deskripsi
1	Deteksi konsumen	Camera mendeteksi konsumen yg masuk ke toko
2	Pemantauan konsumen	Admini memantau konsumen melalui camera
3	Pengenalan konsumen	Sistem melakukan pengenalan gestur,wajah konsumen untuk dijadikan data
4	Hasil pengenalan konsumen	Hasil dari pengenalan konsumen dikirim ke database di chicago