

1/38

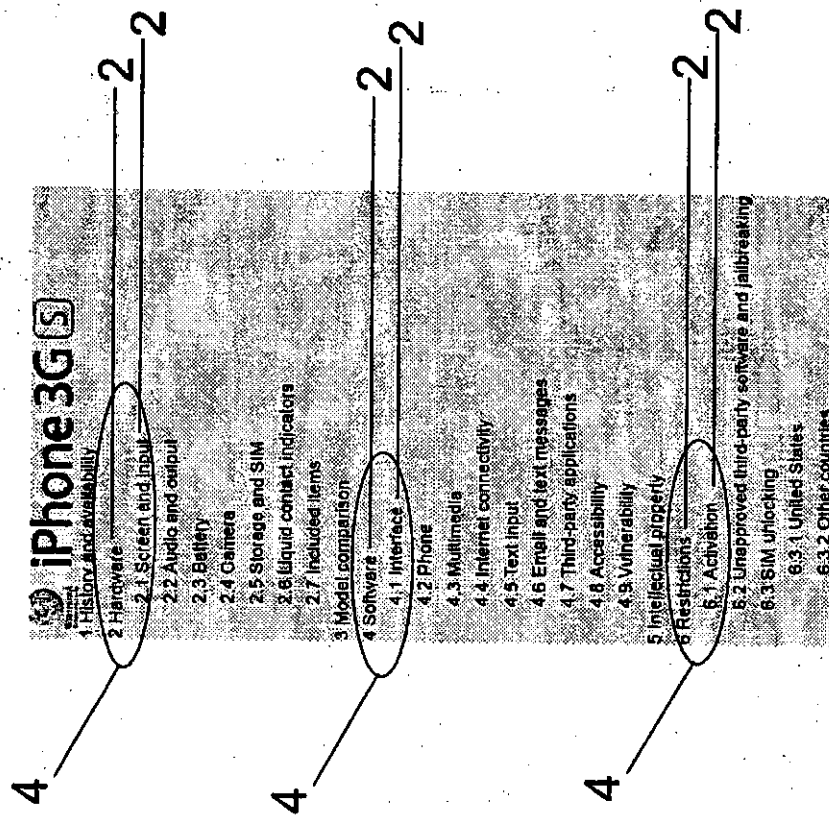


Figure 1

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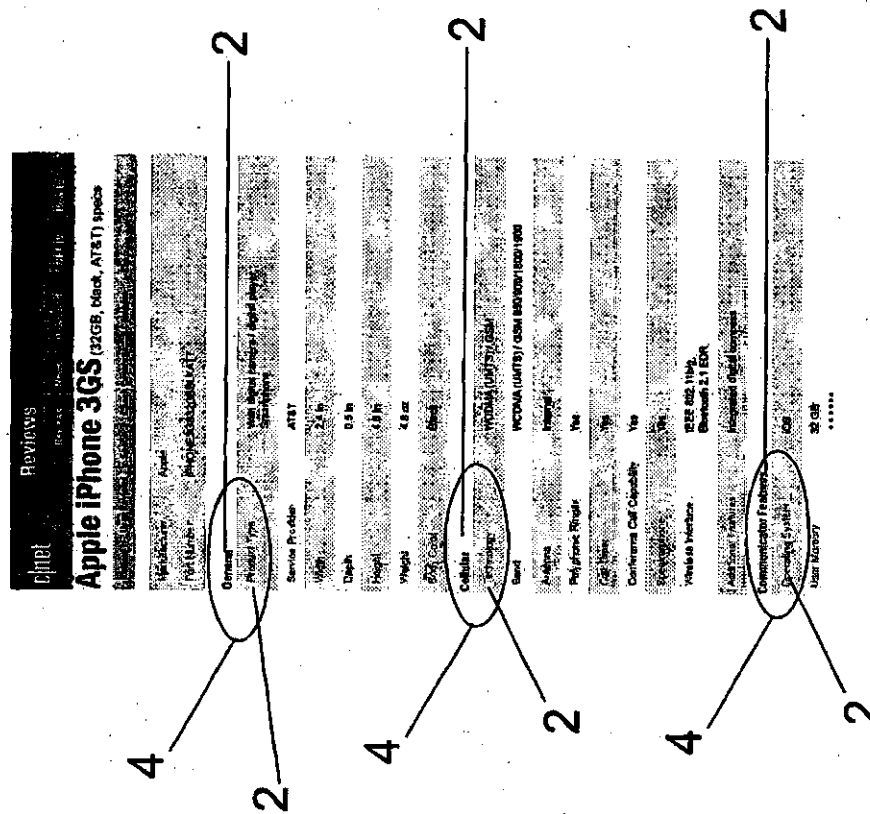


Figure 2

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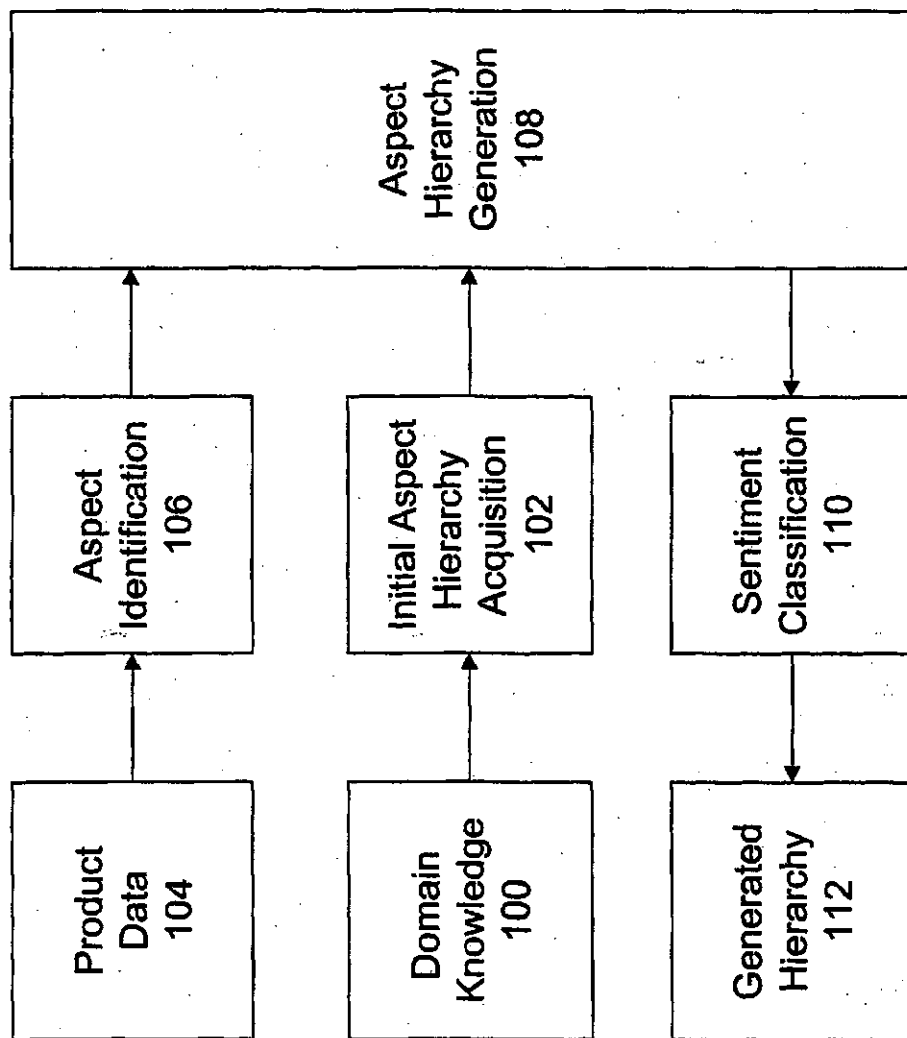


Figure 3a

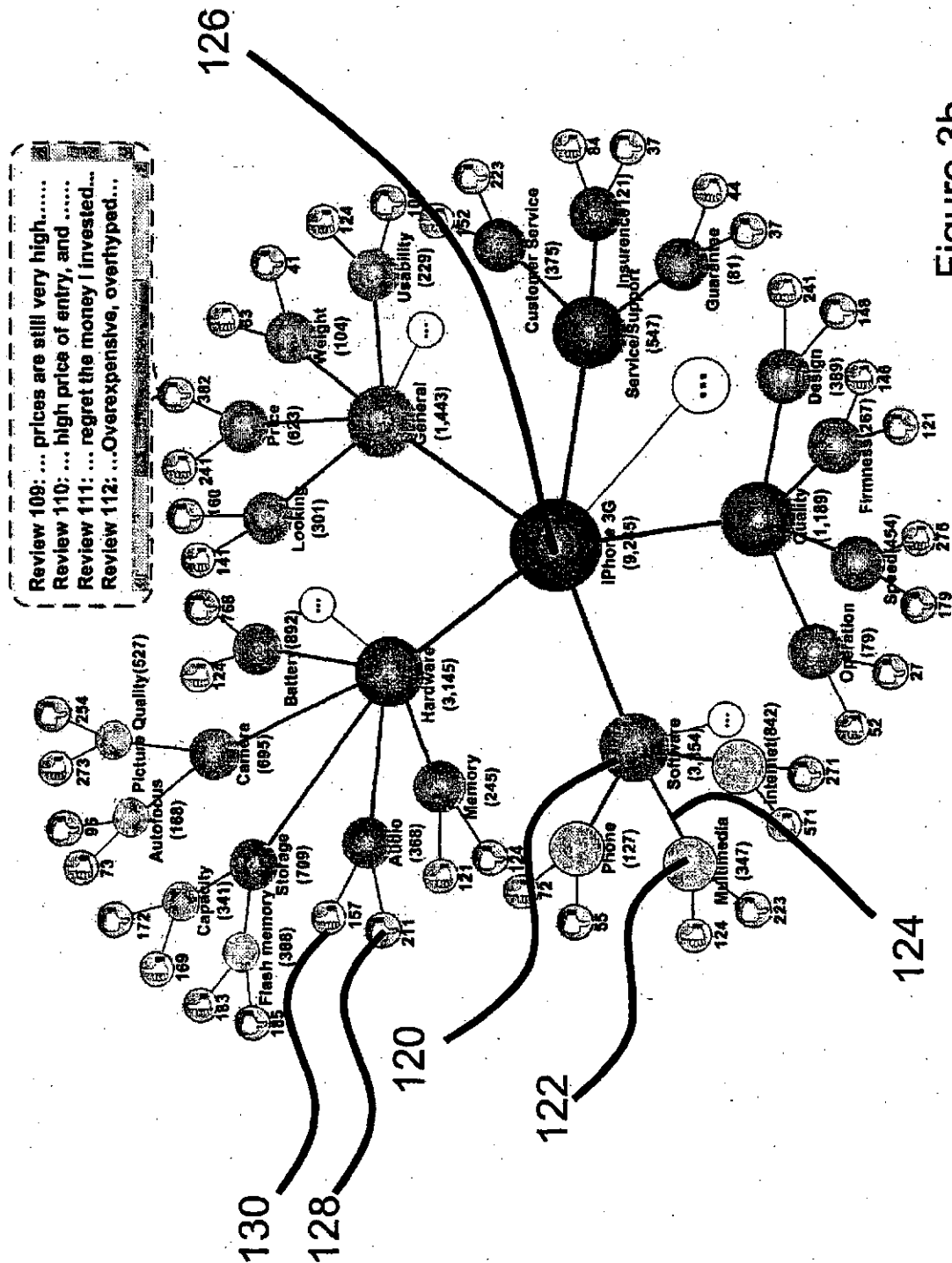


Figure 3b

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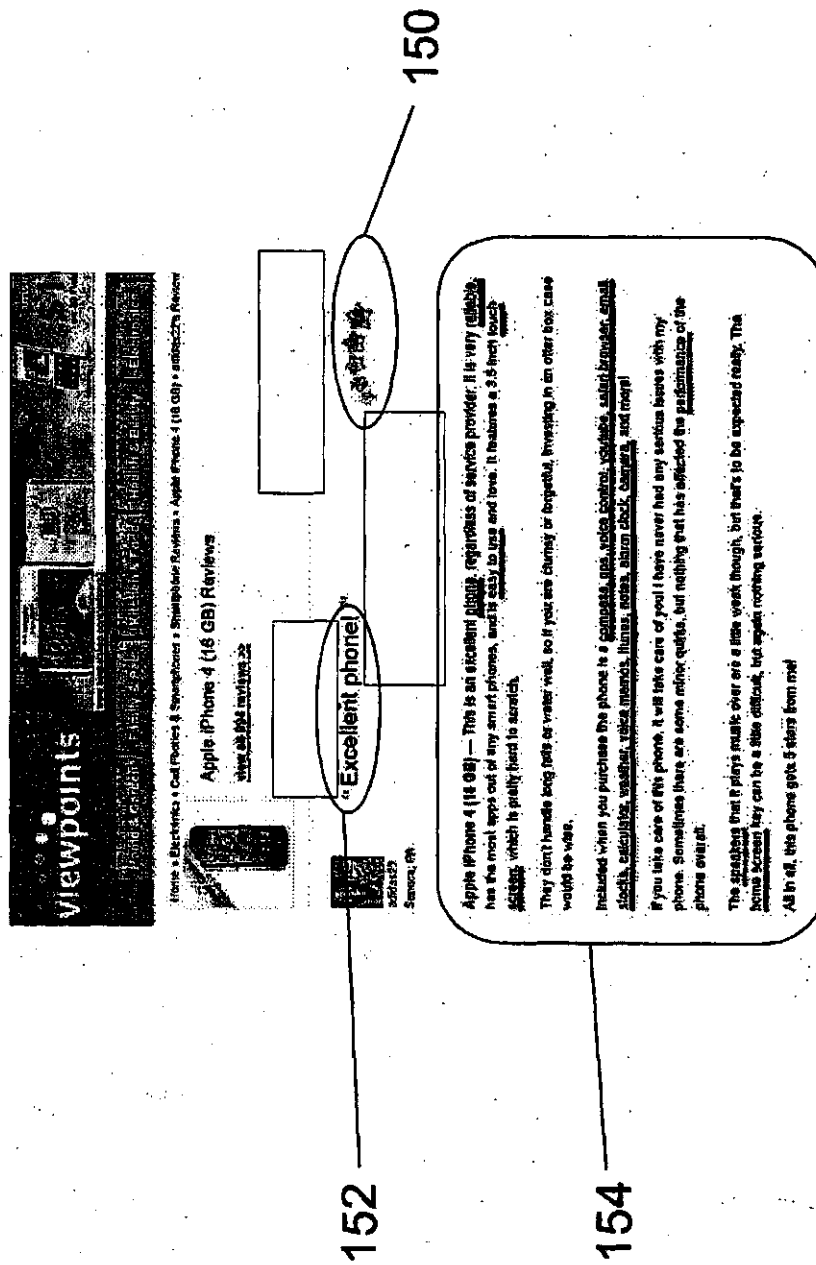


Figure 4

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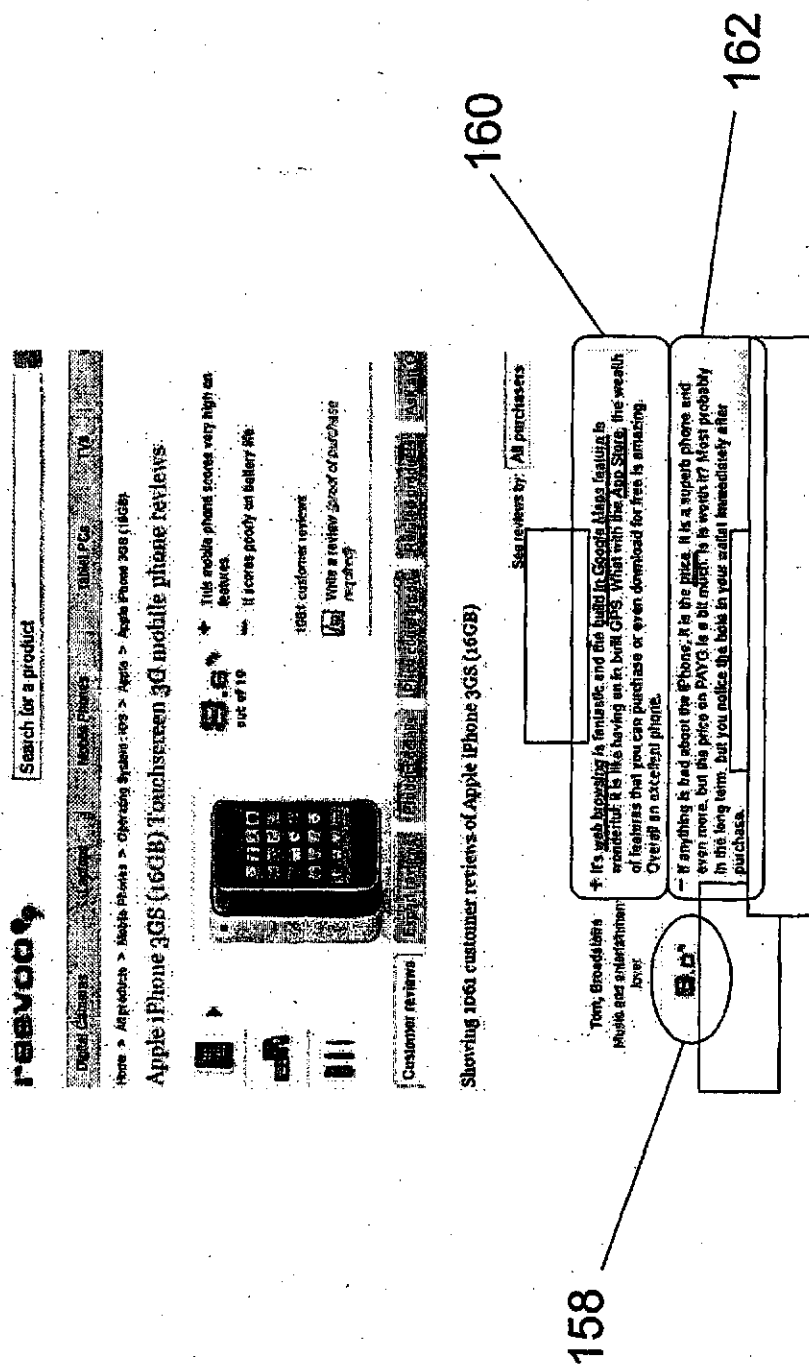


Figure 5

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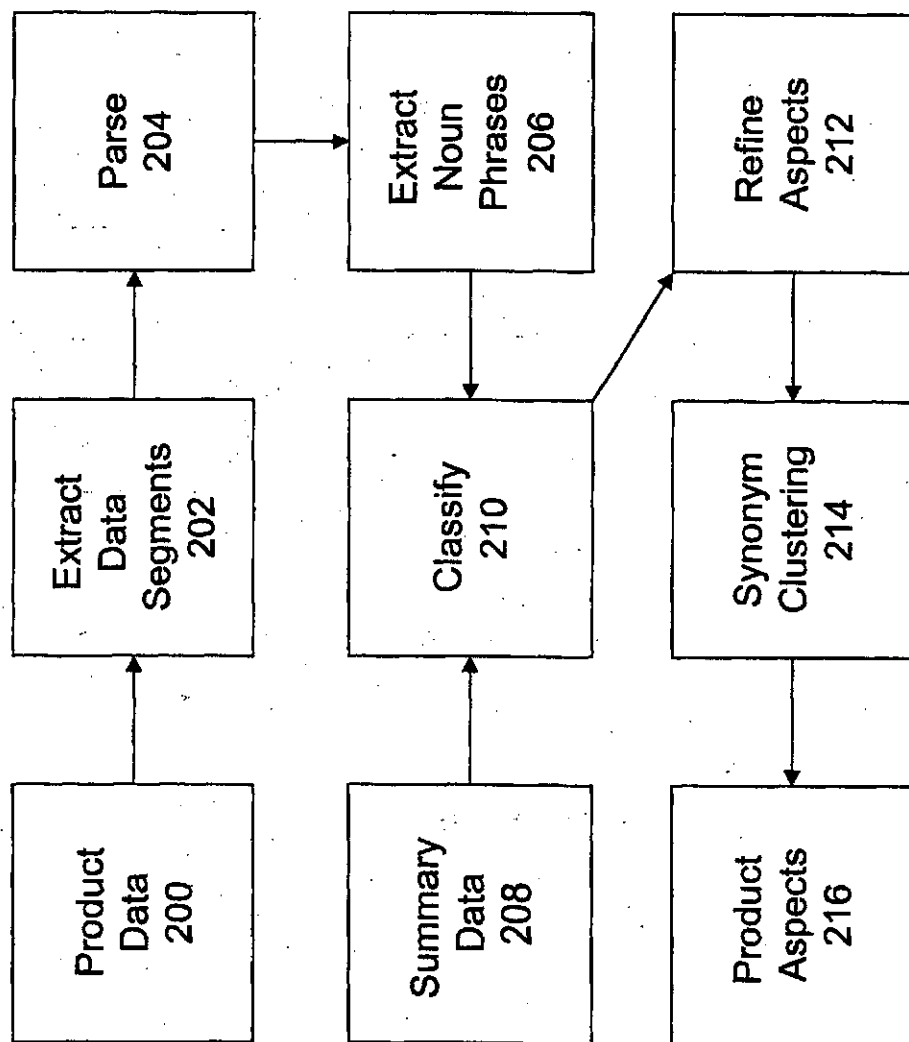


Figure 6

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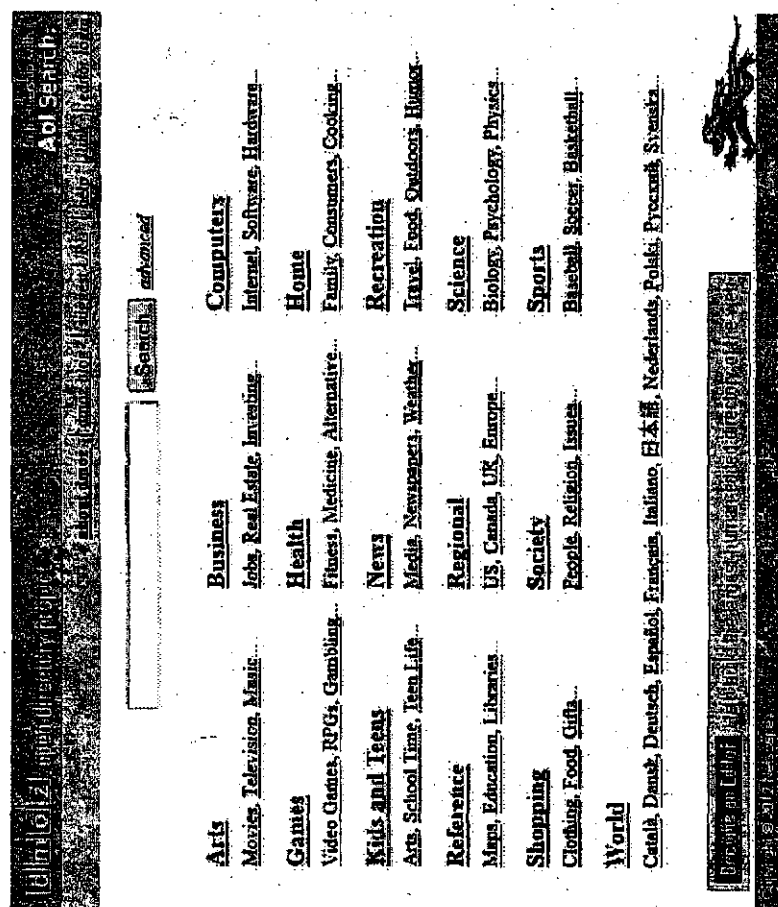


Figure 7

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HYPONYMS OF COMPUTER

[1] computer, data processor, electronic computer, information processing system, (Computer Science)
 => [1] machine, (things), any mechanical or electrical device that transmits or modifies energy to
 => [1] device, (factotum) an instrumentality invented for a particular purpose, the device is
 => [1] instrumentality, instrumentation, (factotum) an artifact (or system of artifacts) that
 => [1] artifact, artefact, (factotum) a man-made object
 => [1] object, physical object, (factotum) a physical (tangible and visible) entity
 => [1] entity, something, (factotum) anything having existence (living or nonliving)

[2] calculator, reckoner, figurer, estimator, computer, (factotum) an expert at calculation (or at a
 => [1] expert, (person) a person who performs skillfully
 => [1] person, individual, someone, somebody, mortal, human, soul, (person) a human-being, there
 => [1] life form, organism, being, living thing, (biolog) any living entity
 => [1] entity, something, (factotum) anything having existence (living or nonliving)
 => [1] causal agent, cause, causal agency, (factotum) any entity that causes events to happen
 => [1] entity, something, (factotum) anything having existence (living or nonliving)

Figure 8

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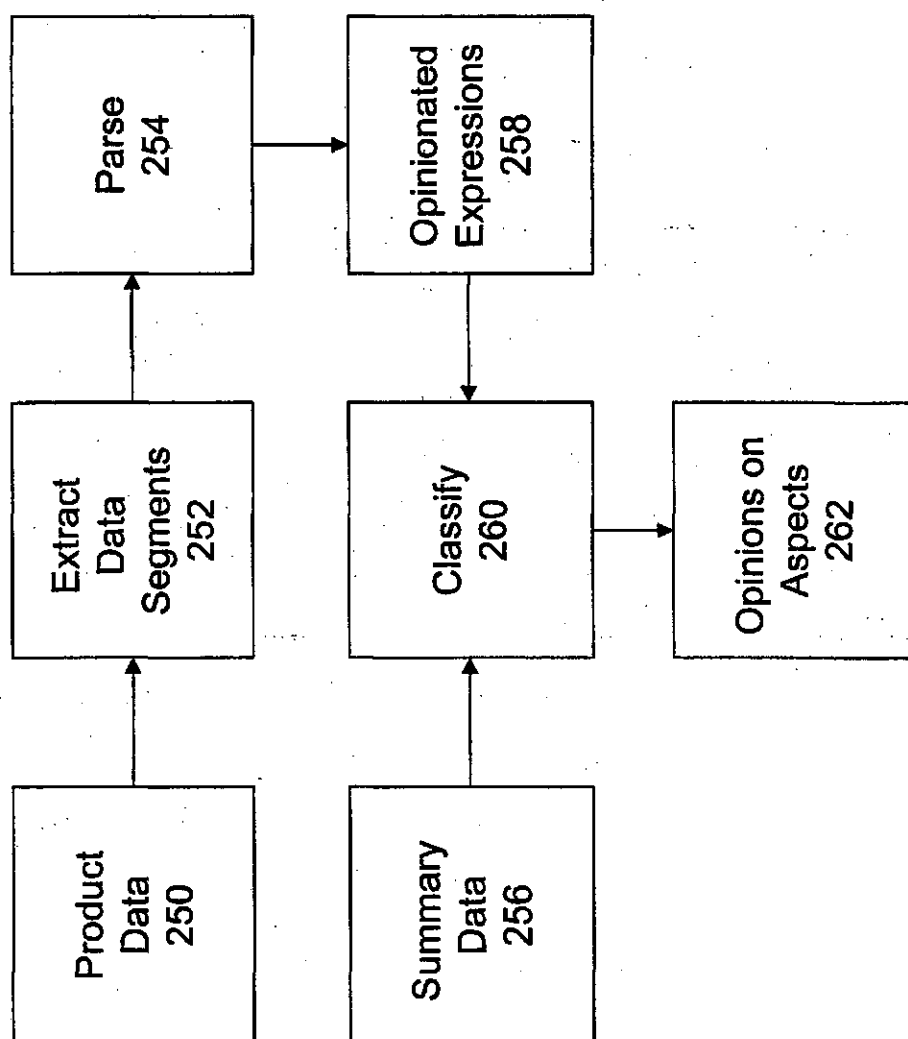


Figure 9

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<i>Product Name</i>	<i>Domain</i>	<i>Review#</i>	<i>Sentence#</i>
Canon EOS 450D (Canon EOS)	camera	440	628
Fujifilm Finepix AX245W (Fujifilm)	camera	541	839
Panasonic Lumix DMC-TZ7 (Panasonic)	camera	650	1,546
Apple MacBook Pro (MacBook)	laptop	552	4,221
Samsung NC10 (Samsung)	laptop	2,712	4,946
Apple iPod Touch 2nd (iPod Touch)	MP3	4,567	10,846
Sony NWZ-S639 16GB (Sony NWZ)	MP3	341	773
BlackBerry Bold 9700 (BlackBerry)	phone	4,070	11,008
iPhone 3GS 16GB (iPhone 3GS)	phone	12,418	43,527
Nokia 5800 XpressMusic (Nokia 5800)	phone	28,129	75,001
Nokia N95	phone	15,939	44,379

Figure 10

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<i>Statistic</i>	<i>WordNet</i>	<i>ODP</i>
Total # hierarchies	50	50
Total # terms	1,964	2,210
Average # depth	5.5	5.9
Total # hierarchy topics	12	16

Figure 11

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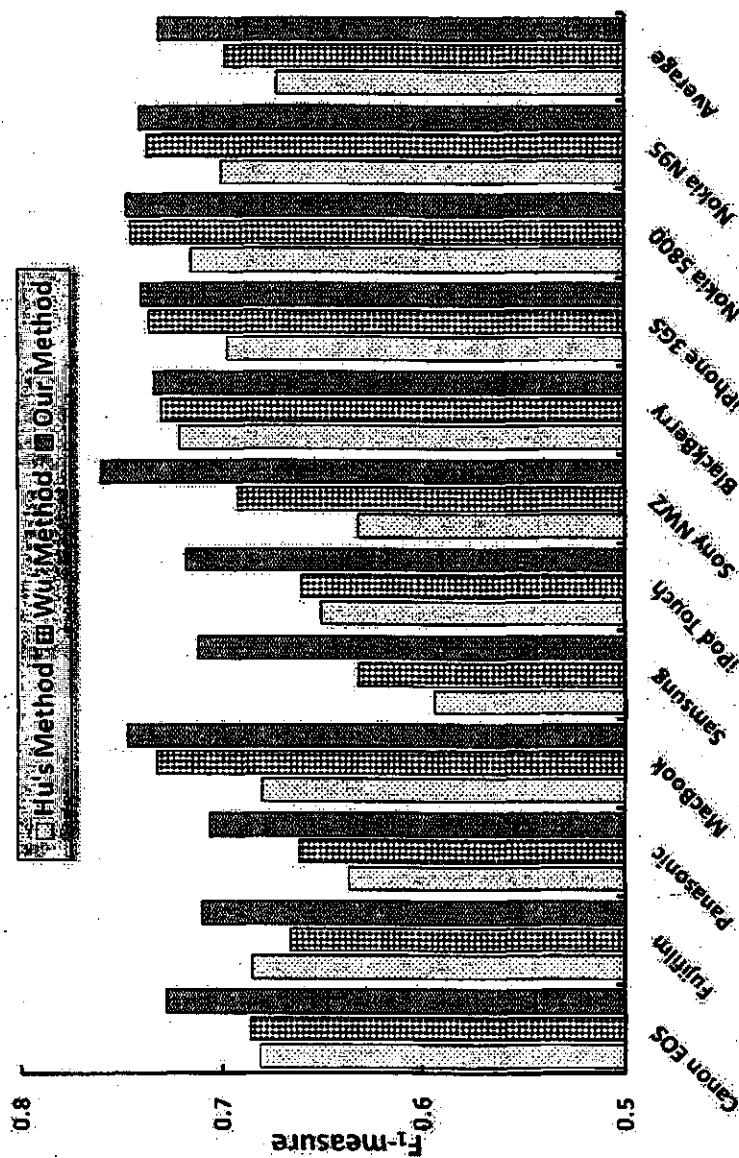


Figure 12

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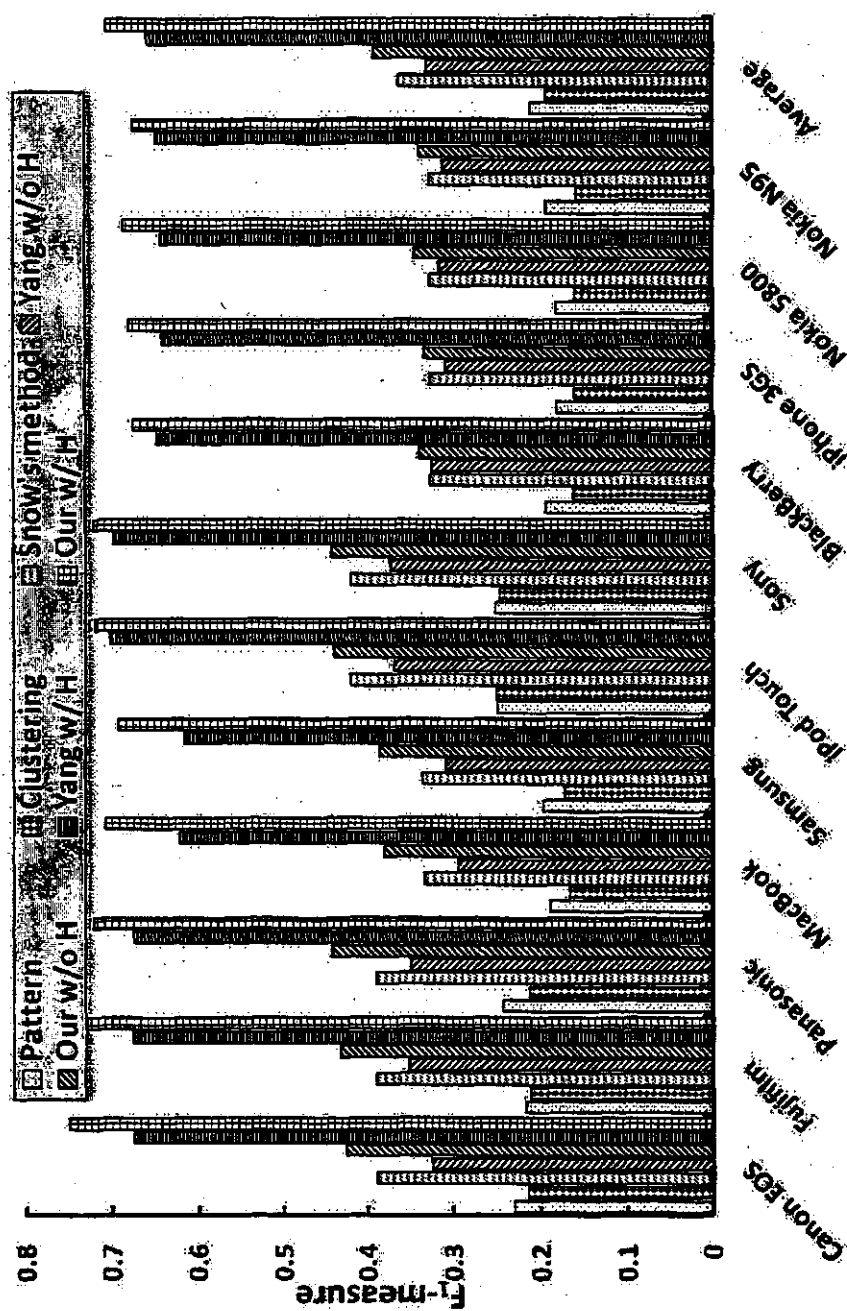


Figure 13

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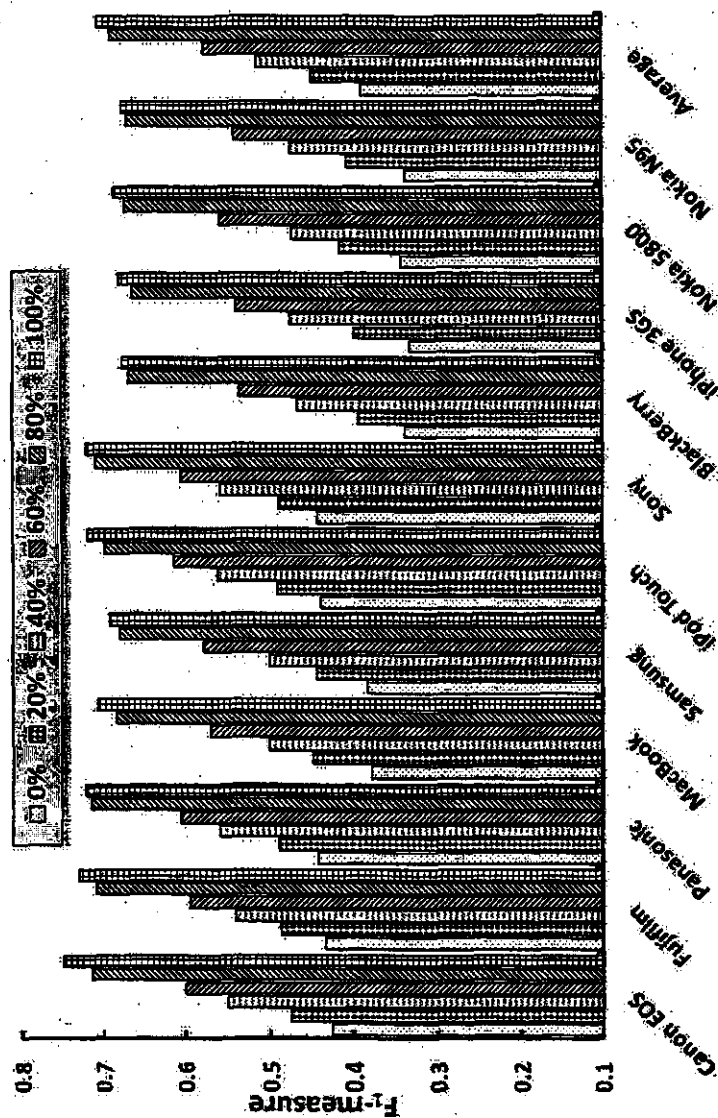


Figure 14

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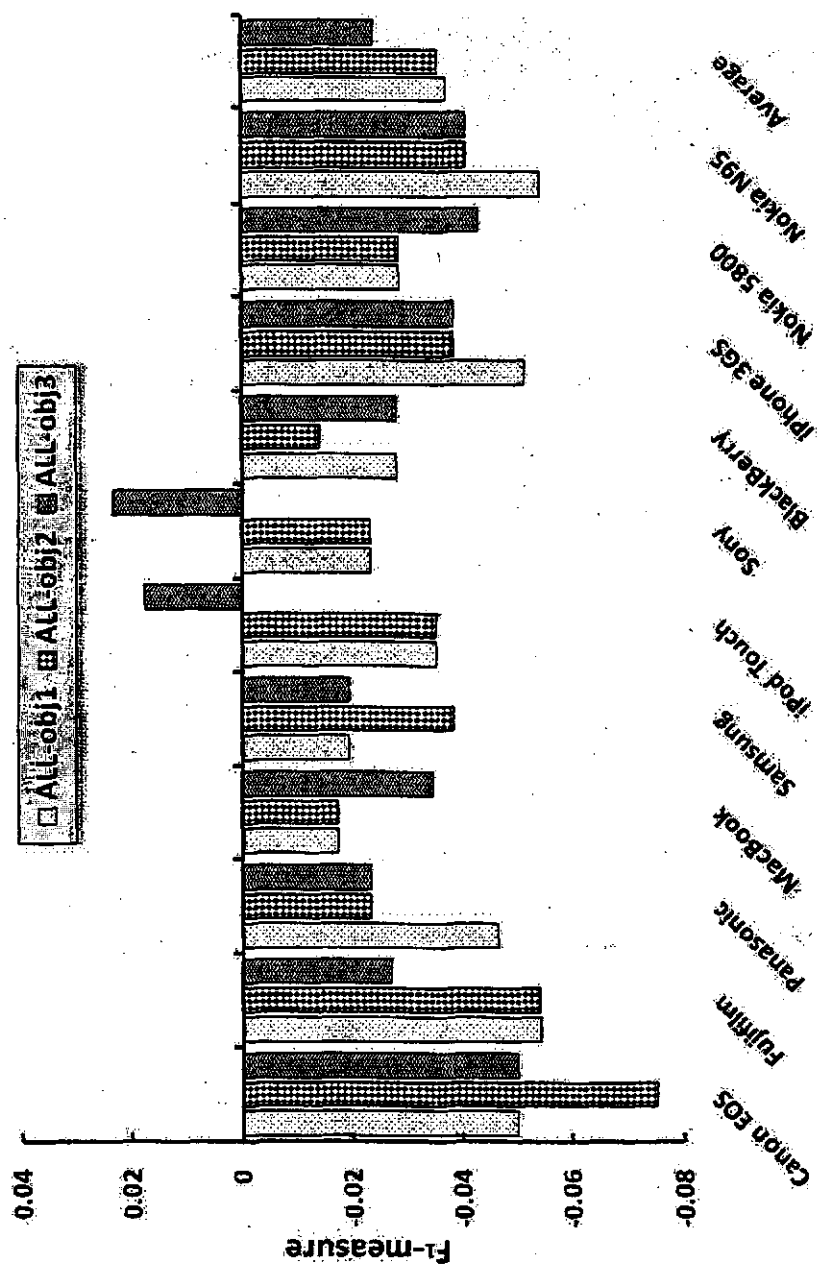


Figure 15

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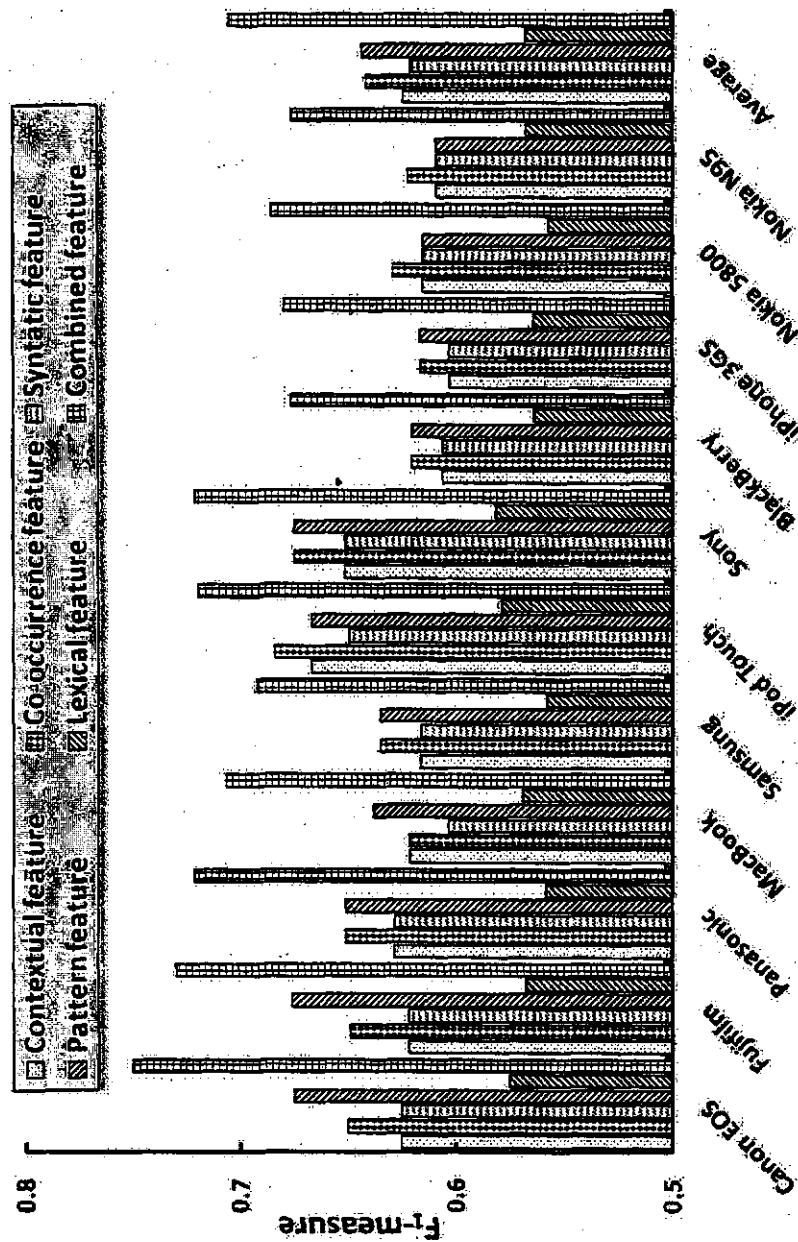


Figure 16

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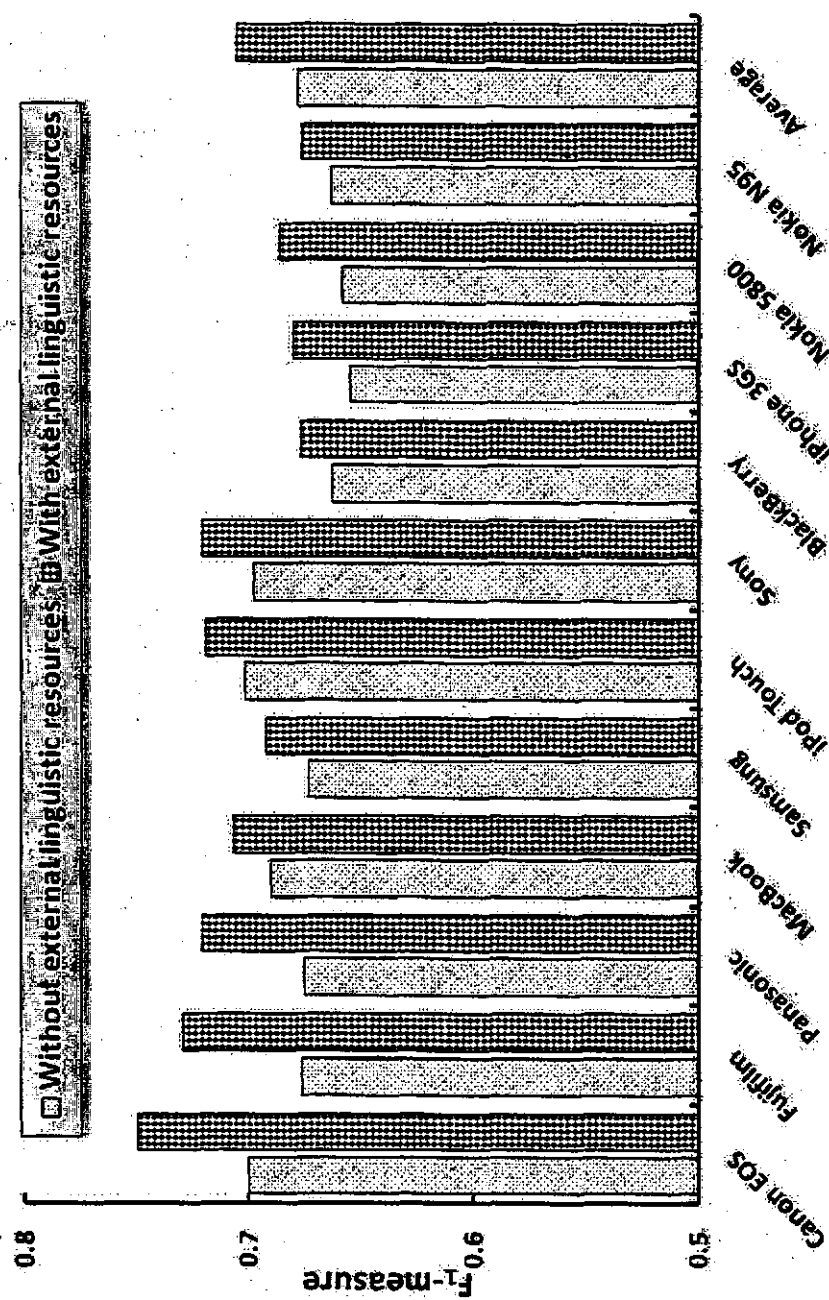


Figure 17

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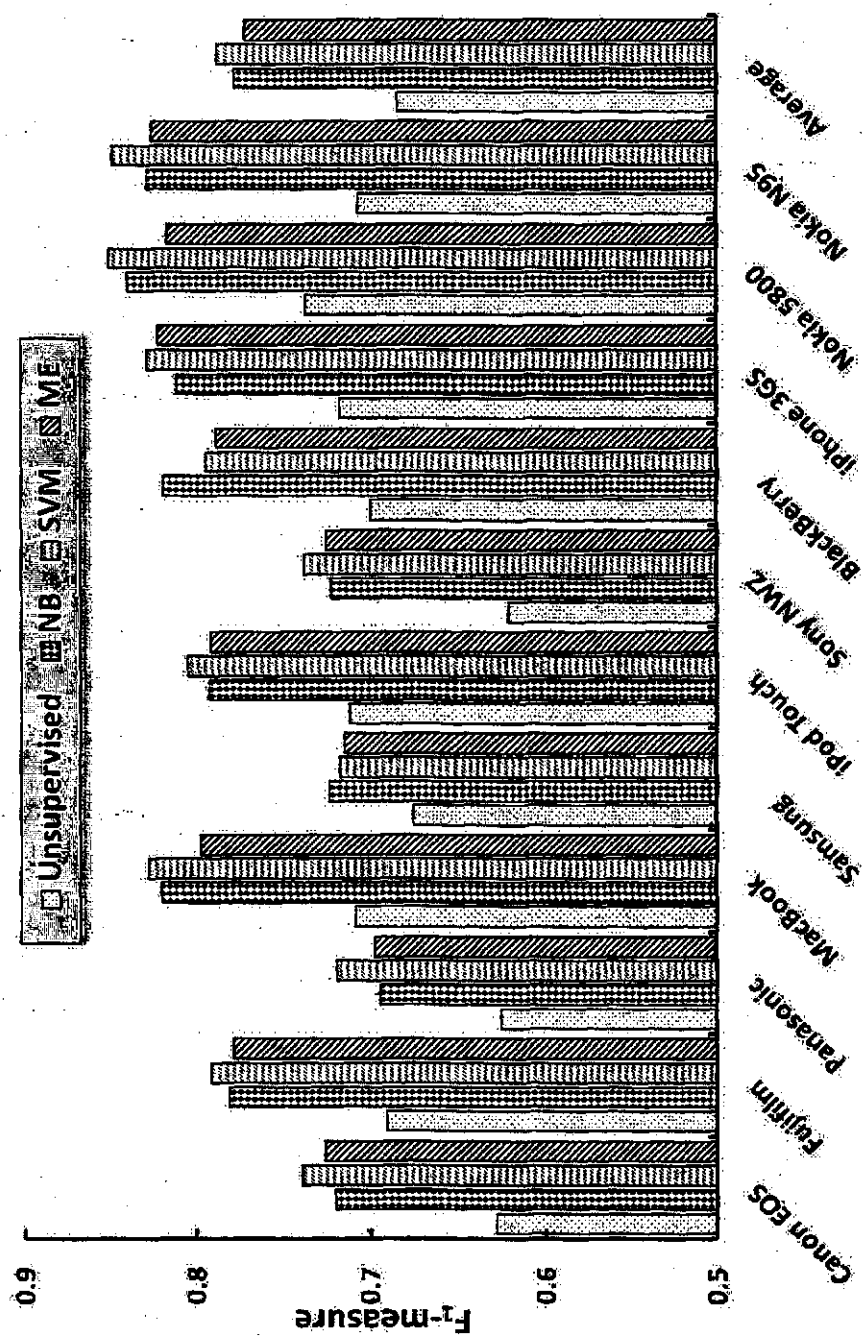


Figure 18

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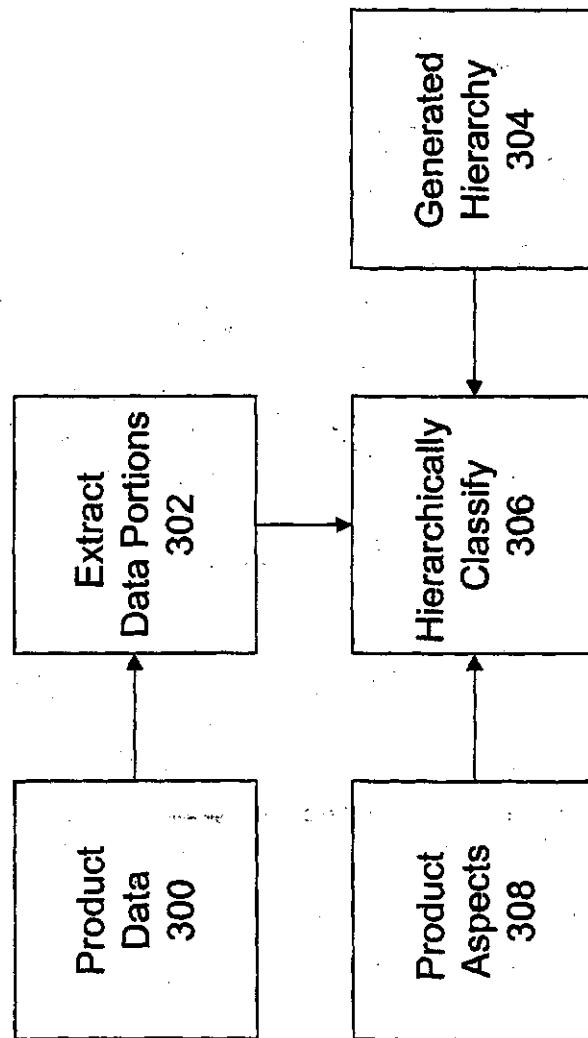


Figure 19

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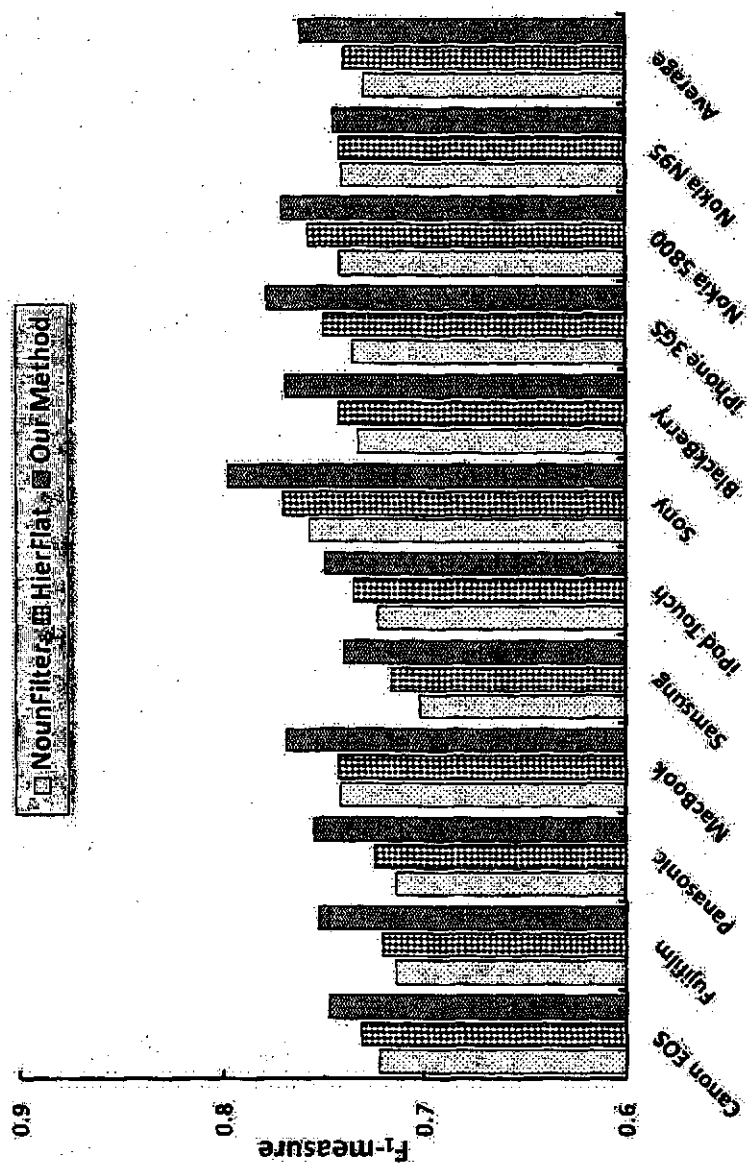


Figure 20

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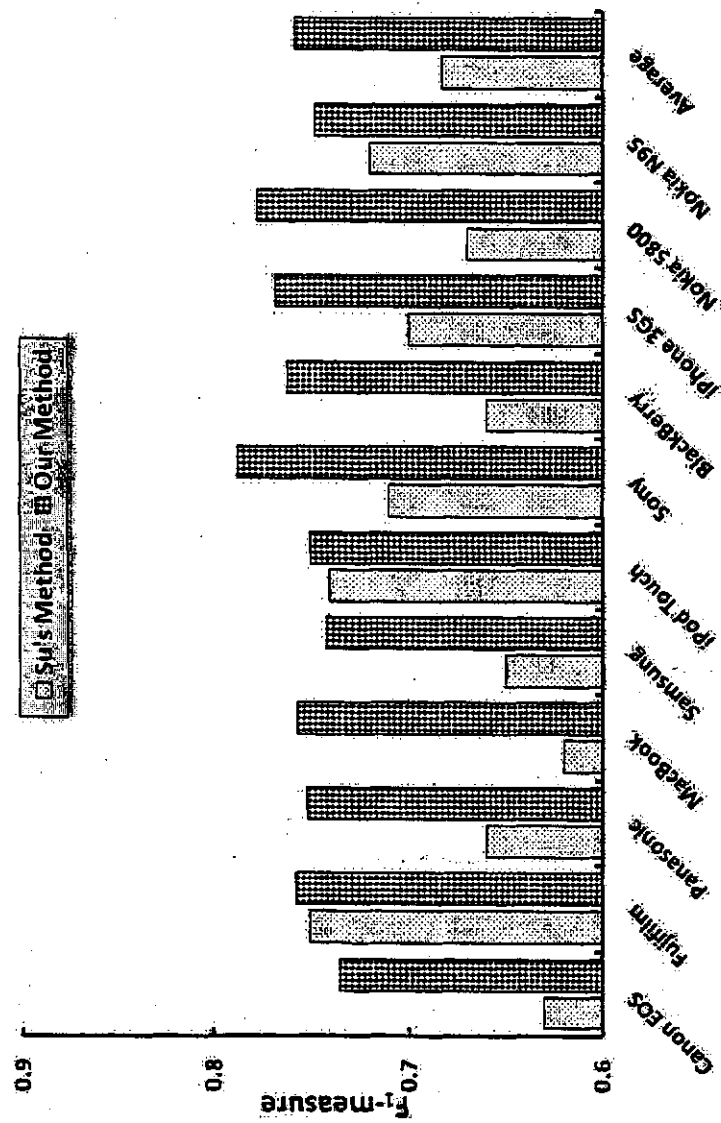


Figure 21

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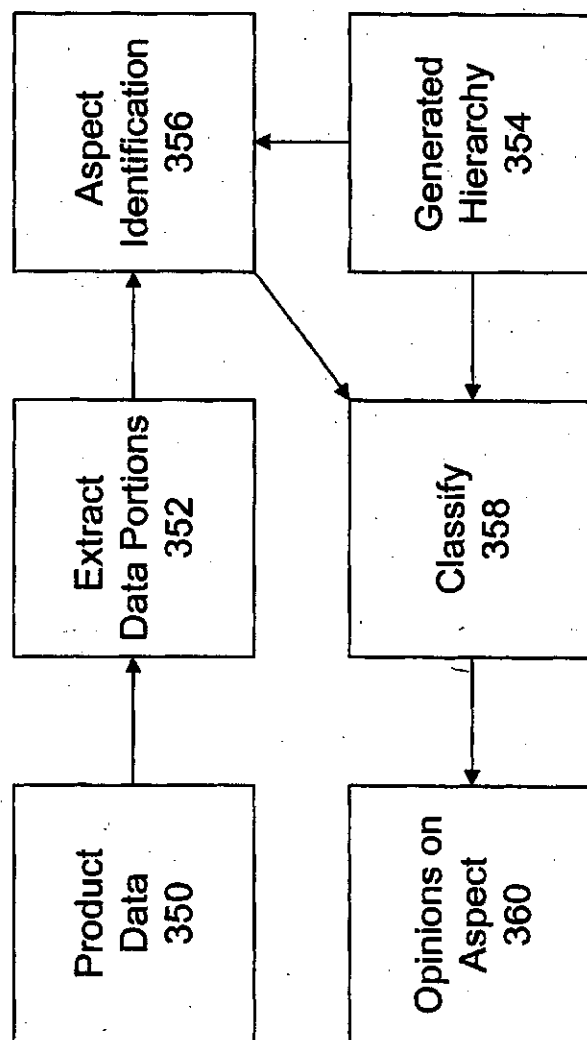


Figure 22

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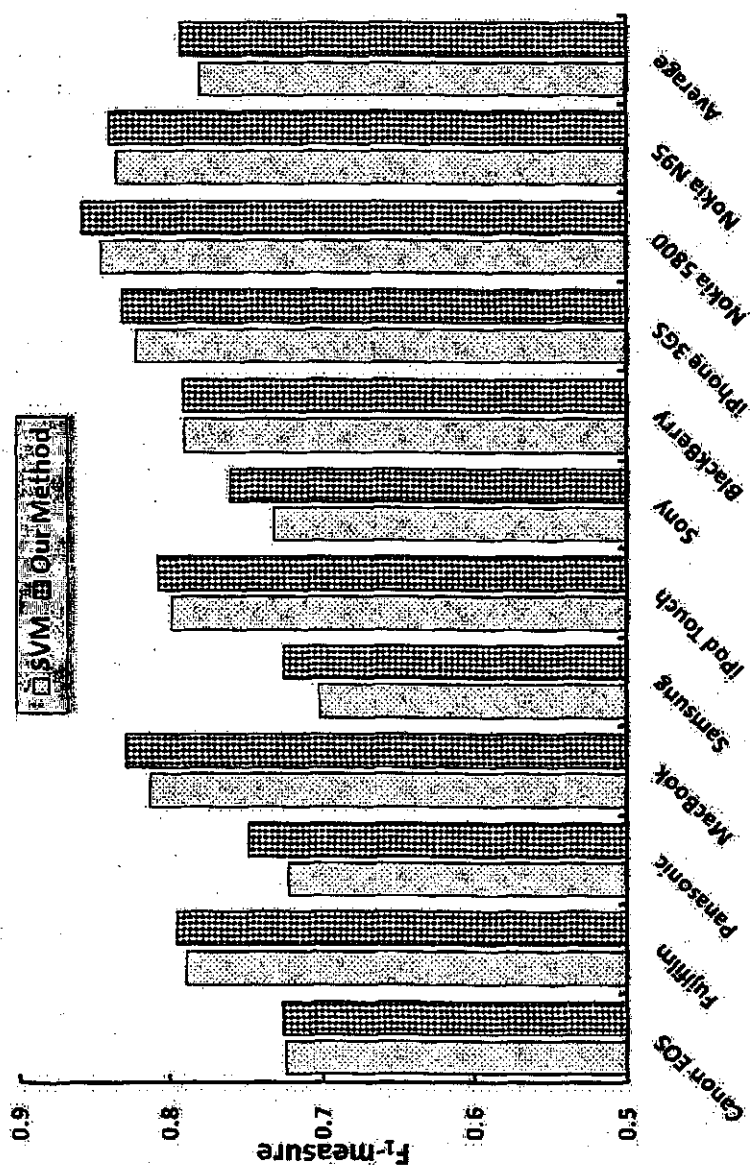


Figure 23

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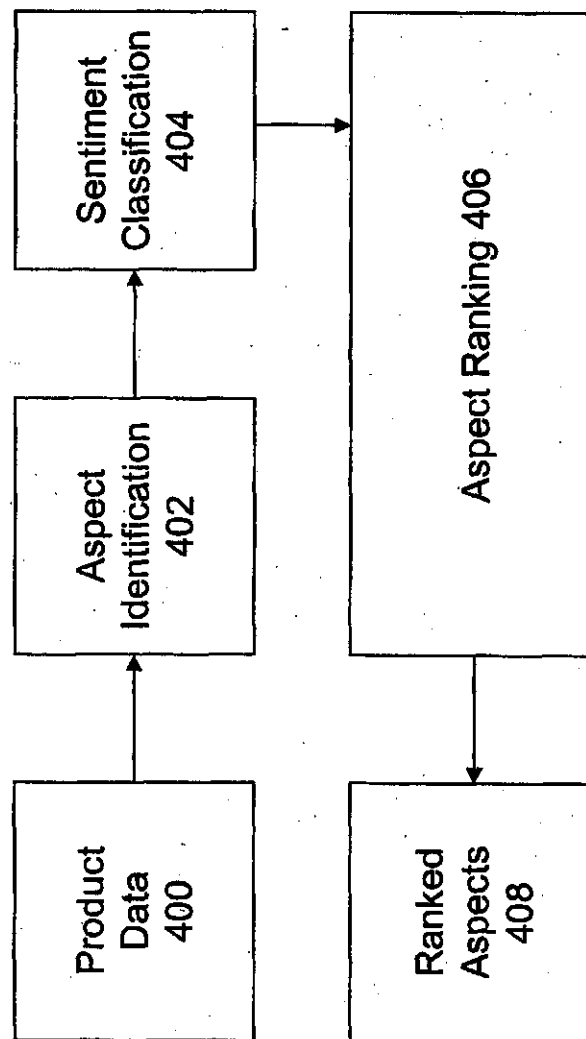


Figure 25

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Algorithm 1 Probabilistic Aspect Ranking Algorithm

Input: Consumer review corpus $\mathcal{R}$, each review $r \in \mathcal{R}$ is associated with an overall rating O_r , and a vector of opinions $\mathbf{o}_r$ on specific aspects.

Output: Importance scores $\{\varpi_k\}_{k=1}^m$ for all the m aspects.

while not converged do

 Update $\{\omega_r\}_{r=1}^{|\mathcal{R}|}$ according to Eq.(4.9);

 Update $\{\mu, \Sigma, \sigma^2\}$ according to Eq.(4.13);

end while

 Compute aspect importance scores $\{\varpi_k\}_{k=1}^m$.

Figure 26

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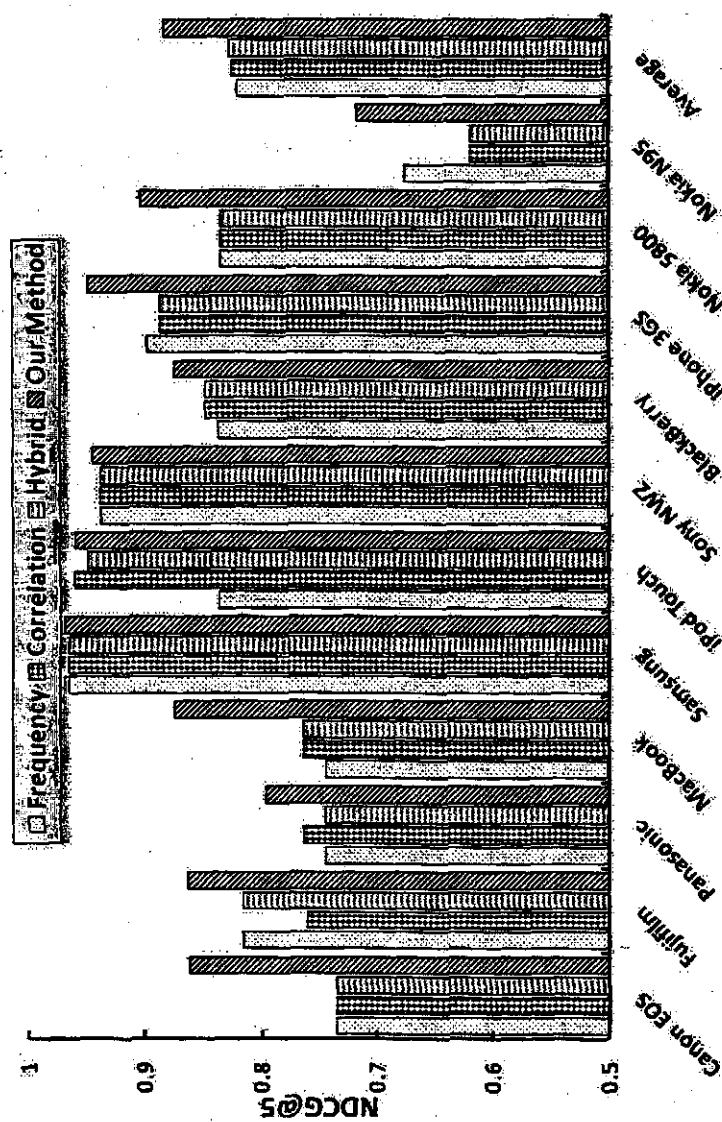


Figure 27

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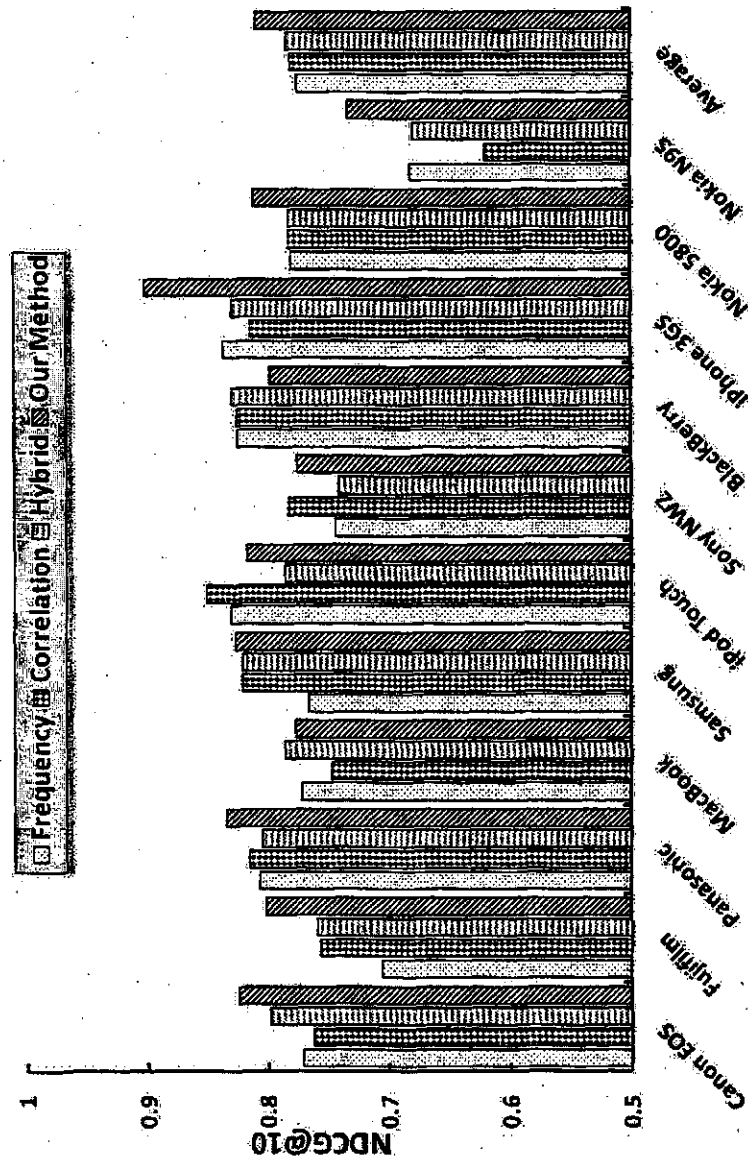


Figure 28

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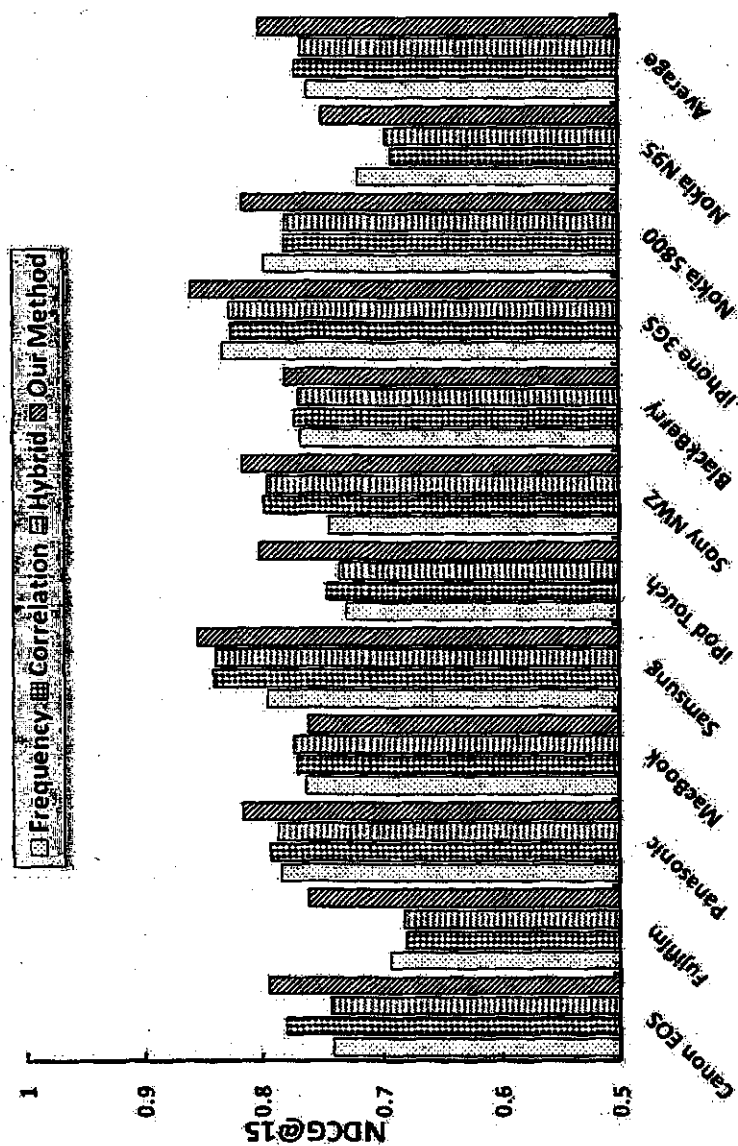


Figure 29

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	<i>Frequency</i>	<i>Correlated</i>	<i>Hybrid</i>	<i>Our Method</i>
1	Phone	Phone	Phone	Usability
2	Usability	Usability	Usability	Apps
3	3G	Apps	Apps	3G
4	Apps	3G	3G	Battery
5	Camera	Camera	Camera	Looking
6	Feature	Looking	Looking	Storage
7	Looking	Feature	Feature	Price
8	Battery	Screen	Battery	Software
9	Screen	Battery	Screen	Camera
10	Flash	Bluetooth	Flash	Call quality

Figure 30

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"Excellent phone!"



adidas22
Seneca, PA

Apple iPhone 4 (16 GB) — This is an excellent phone, regardless of service provider. It is very reliable has the most apps out of any smart phones, and is easy to use and love. It features a 3.5 inch touch screen, which is pretty hard to scratch.

They don't handle long falls or water well, so if you are clumsy or forgetful, investing in an otter box case would be wise.

Included when you purchase the phone is a compass, gps, voice control, youtube, safari browser, email, stocks, calculator, weather, voice memos, iTunes, notes, alarm clock, camera, and more!

If you take care of this phone, it will take care of you! I have never had any serious issues with my phone. Sometimes there are some minor quirks, but nothing that has affected the performance of the phone overall.

The speakers that it plays music over are a little weak though, but that's to be expected really. The home screen key can be a little difficult, but again nothing serious.

Figure 31

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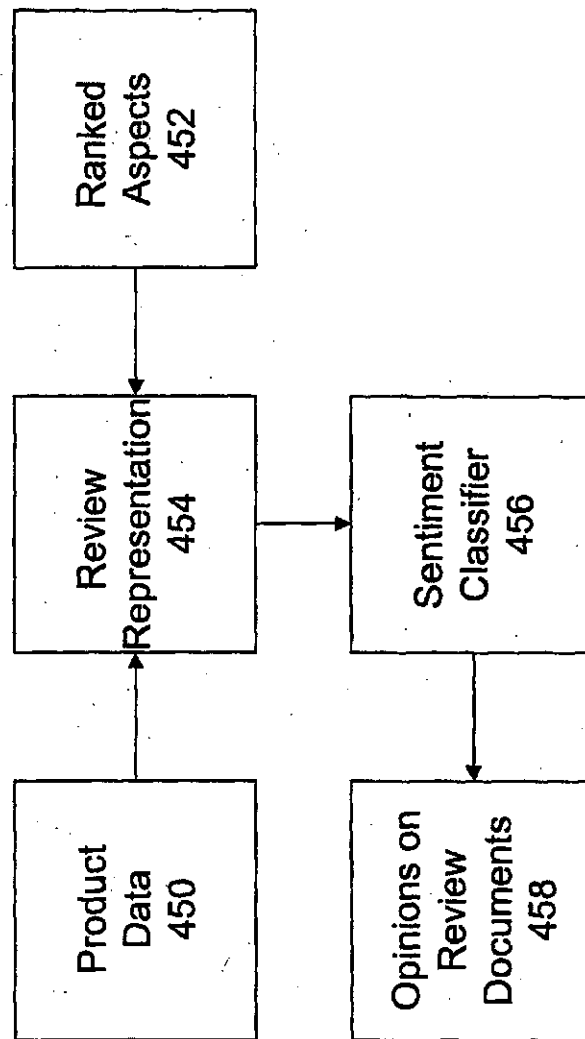


Figure 32

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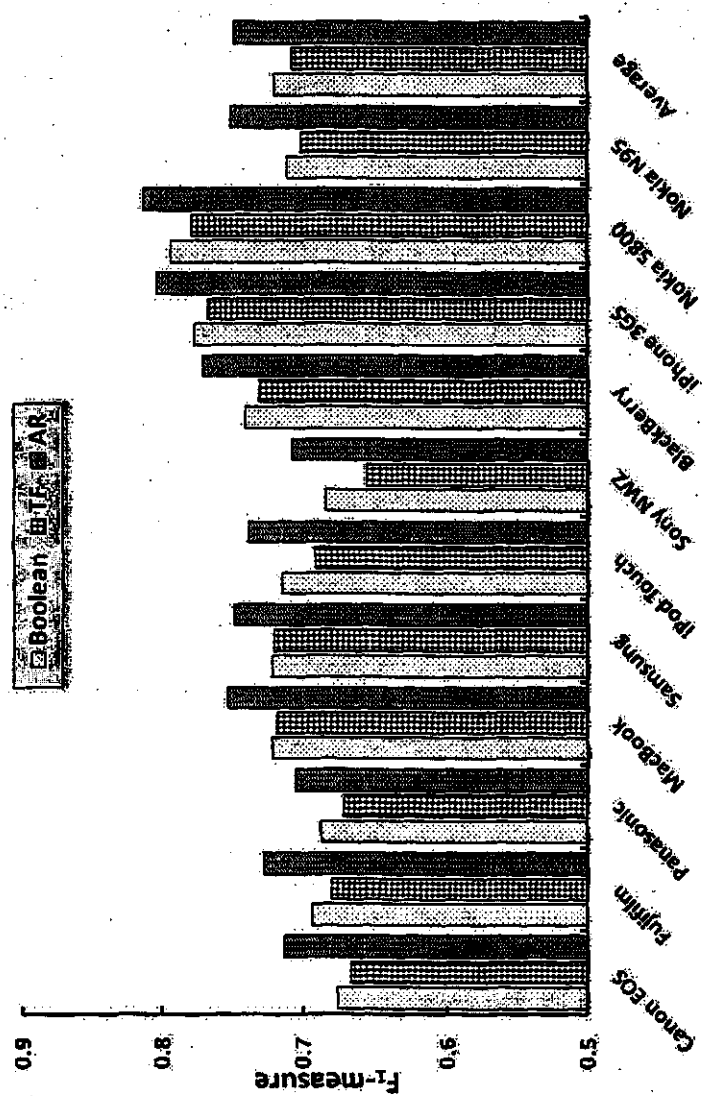


Figure 33

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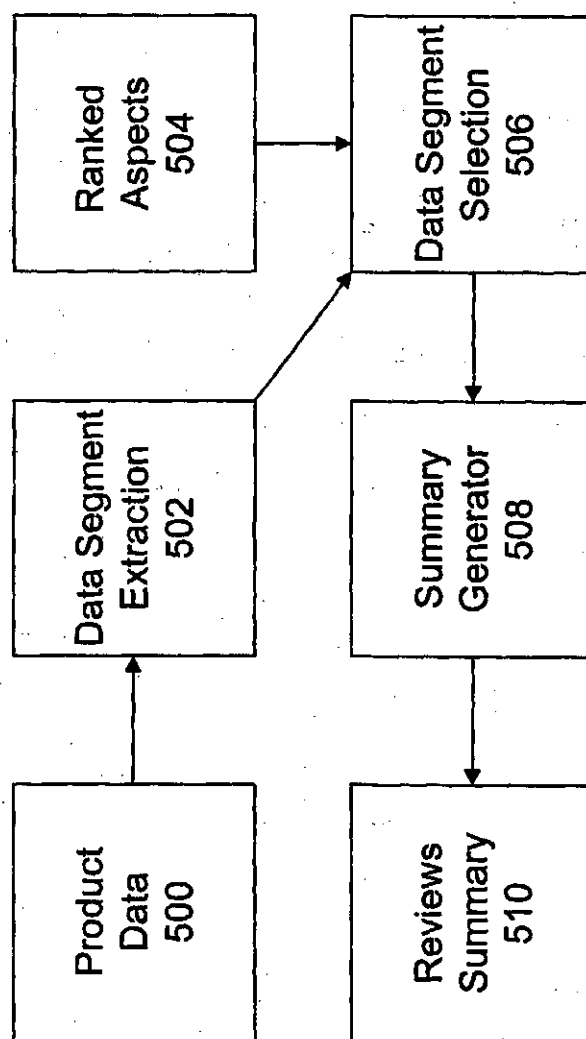


Figure 34

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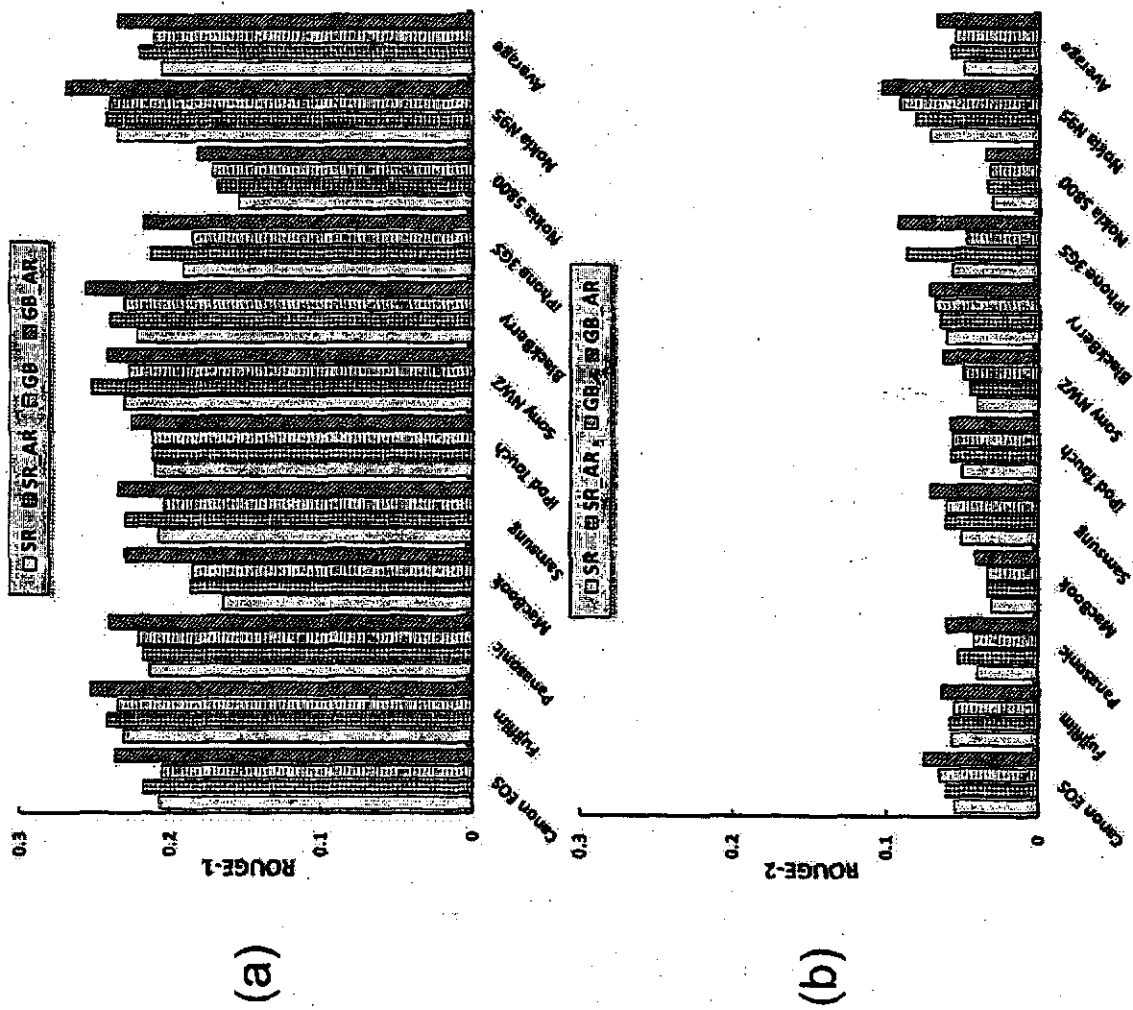


Figure 35

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SR	<i>The iphone offers the best touchscreen, stable and consistent performing web browser, best integration of services, a music player that can replace your ipod, access to thousands and thousands of 3rd party apps, the highest rated customer service, convenient access to high quality music, tv shows, music videos, and movies, the best implementation of commonly used features, one of the most, if not the most, stable os, the best ui, etc.</i>
SR_AR	<i>Overall this is the best smartphone I have ever used. I would recommend this phone to just about anyone. It's easy to use, looks cool too. It is worth every penny! The 3G network and the internet is Great. It's graphical interface is amazing almost life like, really pretty. The sound quality is great when talking and speakerphone is good too. The battery charge is long lasting and the possibilities are limitless. It is extremely capable of running software to do almost anything. The apps are a lot of fun and so many are free to the user. I would recommend this phone to just about anyone. The phone is packed with features such as Google map, a compass, a bunch of downloadable apps, as well as the usual email. The Apple OS is so refreshing. If you have wifi in your neighborhood, this phone is fantastic for browsing. It is well equipped with a functional browser, mail software, messaging. I can tell you that the front screen is nearly scratch proof. The only thing that I find to be a downer is the fact that there is no flash for the camera.</i>
GB	<i>The 3gs is a fantastic phone which I recommend so highly to anyone. Looks great, feels nice, spacing in most cases are great and the spell check is pretty accurate. Definitely worth the extra money! You can keep a 3G signal at home most of the time. The battery life is a guarantee to last. The camera is good and takes great photos. From the design, to software, it's truly a great phone. Internet is great on iPhone very fast and responsive. It is really a great multimedia device. The apps are great, and it's easy to use and navigate.</i>
GB_AR	

Figure 36

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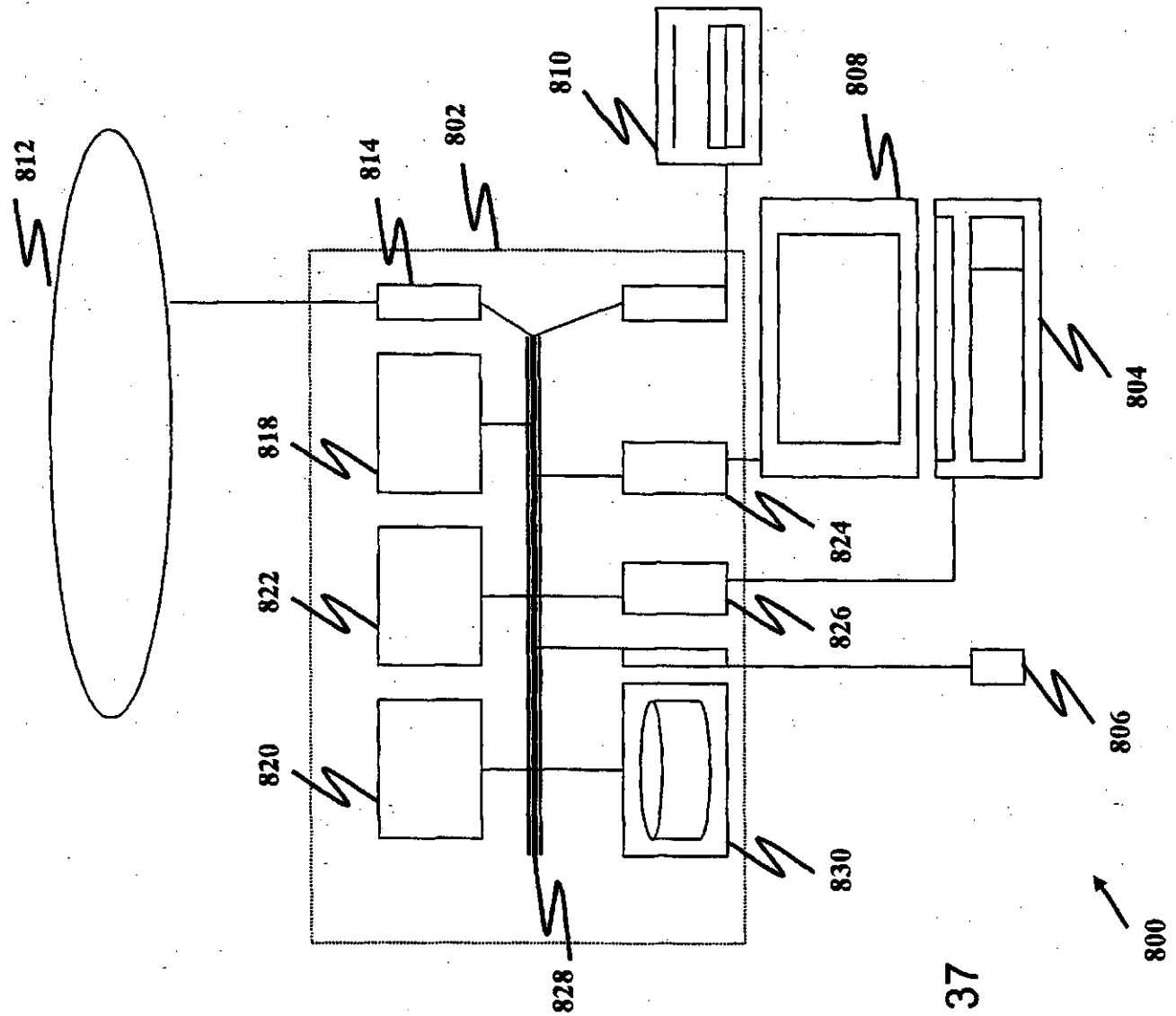


Figure 37