

Using Age and Gender Video Analytics to improve customer satisfaction, staff rostering and sales conversion in retail and financial services

The term “retail” covers a wide range of business to consumer transactions. These can range from the weekly supermarket visit, through the purchase of expensive consumer goods like jewellery and motor vehicles to the sale of financial services by banks and insurance companies through their branch network.

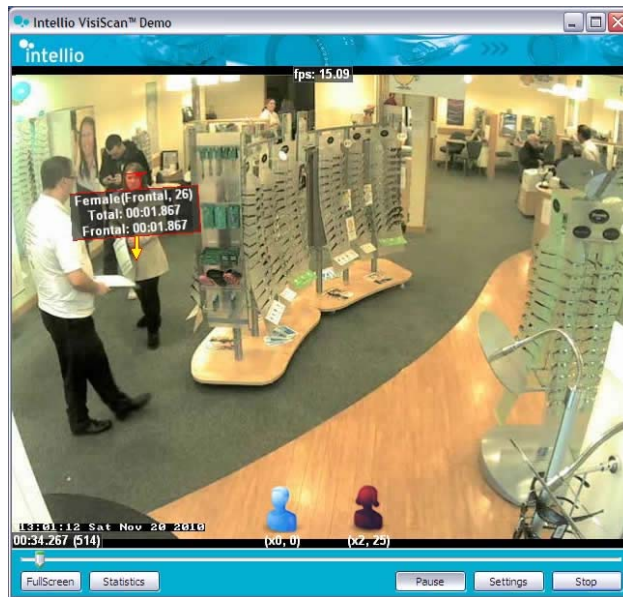
However in all of these transactions the “seller” is trying to increase his revenue while enhancing his brand’s reputation by offering high levels of service to the customer. In this white paper we are going to look at how the use of Age and Gender estimation from CCTV video has offered a marketing advantage to a fashion retailer, a major Bank and a DIY Superstore, and the methods they were able to derive to reduce their cost base while increasing both their sales revenue and improving the customer experience.

The Opticians

Opticians; who sell glasses, contact lenses and associated services like eye tests are in the fashion business. What you wear on your face says a lot about how you would like the world to see you. Almost uniquely amongst fashion retailers Opticians sell to both males and females and to a demographic range from the very young to the very old. In addition there is a key demographic split within their potential customer base; under the age of about 45, a percentage of the population need glasses, while over the age of 45 almost everyone needs glasses, if only for reading. Therefore the ability to measure the footfall outside a potential shop location and measure the percentage split of over and under 45 years of age will be an extremely useful indicator of the potential market for this store.

In the picture below a CCTV camera has estimated the age and gender of a potential customer who is in discussion with a member of staff about a potential purchase. As can be seen from the metadata overlaid into the image stream the software has judged her to be a female aged 26. From the image we can be certain that she is a female and her age range is certainly within her twenties, which fits with the software’s accuracy of around 90% within plus or minus 5 years, the member of staff serving her is a male of around 40.

The question which has to be asked is would the customer feel more comfortable and be more likely to purchase if the person helping her to make her decision was also female and of a similar age?



Fashion purchases are very heavily influenced by our peer group and advice from “our parents generation” is often discounted when in reality it is good advice solely because it comes from someone who is outside the peer group.

The Bank Branch

Retail Banks offer a very wide range of financial services which are often tailored to an individual's stage in life: examples include 1st time mortgages, Pension Plans and Estate Tax planning. It is impossible for any single member of staff to be an expert in all of these products, however this kind of financial sale requires the potential customer to have an extremely high level of trust in the Bank Clerk advising them, as the financial consequences of a poor decision will be potentially very critical to them and also may not be noticed for many years. In the UK almost all of the large financial institutions have suffered major reputational loss over recent years due to the miss selling of pensions (Equitable Life), protection guarantees on loans and Mortgages (High St Banks).

An organisation which is better able to measure the demographics of the potential customers for its products entering the branch and therefore predict what type of demand is likely on given days or periods in the future can arrange for much smarter staff rostering. There is little point in having someone who is expert on inheritance tax planning in the branch at a time when the majority of the potential customers are likely to be “twenty somethings”.

Many Banks operate staff whose role is to greet people as they walk into the branch and direct them to the appropriate person or facility, having the right staff with the right skill set at this first interaction will significantly improve any potential sales process. It might be felt that a Bank would know lots about its customers, however many branches are used for cash withdrawals by customers of other Banks, staff from small businesses who are paying in the takings etc. all of whom are potential opportunities but may not be direct customers of that institution.

Bank Branches have one significant advantage over many retailers; they tend to have a much higher number of CCTV cameras for security purposes and these tend to be focused

more closely on where faces are likely to be captured (as they need to be able to prove beyond reasonable doubt who was in the branch in the event of a robbery). These camera positions are closely aligned with the optimal camera angles for age and gender estimation.

The DIY Superstore

These large, normally out of town, “sheds” carry an enormous range of merchandise from screws and nails through garden equipment to new bathrooms and kitchens. Many of them have utilised footfall systems for many years to measure the number of people in store and the conversion rate. However this gives a simplistic simple view of the potential information. Gender analysis will supply feedback on the product ranges (females are more likely to be interested in soft furnishings than men, while more men will be interested in power tools than women).

However the key feature we found within this type of retailer is the potential to understand how long demographic segments remain in store, perhaps single men have an average time in store of half that of couples, older women take longer (or shorter) than younger women. This data feeds back to how well the customers understand the products they are trying to buy, the need for qualified staff to be available to advise on the purchase etc.

Conclusion

While all three retailers appear to be very different, in reality the issues are almost identical. They need to maximise the sales potential while minimising costs. By better understanding the demographics of each individual store, how that changes through the day, by the day of the week or the season of the year we can provide you with the data so that you employ the right amount of the right staff at the right time to meet the customer's requirements. Work done by the Bank has estimated that with the right information to ensure optimal staff rostering they could reduce the staff costs by more than 5% while at the same time increasing sales and improving their Brand image and their position in the market.

For more information on how Age & Gender estimation Video Analytics could help your business reduce costs, increase sales and strengthen your Brand please contact:

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