A technical analysis of the Ignite retail system

An analysis highlighting the comprehensive systemic and logistical failure of the Ignite system to deliver the intended productivity and efficiency gains

by
Aren Tyr

Abstract

This short report provides an assessment of the real world performance of the Ignite system as introduced within a particular store as observed by the author. It outlines the intended workflow, objectives and use of the system, and contrasts this with the actual practice and use of the system. It describes the pragmatic decisions colleagues are forced to make working under the auspices of the system. The report illustrates how the system comprehensively fails to achieve its intended objectives, and has in fact created a technical hindrance to staff going about their day-to-day activity, without any perceivable or usefully measurable business gain. This illustration is accomplished by a step-by-step breakdown of the discrepancy between the intended objective, or apparent claims, and the practical result, or actual reality. It concludes by offering that the system in its present incarnation is unfit for purpose, and needs comprehensively re-evaluating.

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§1 - Preliminary Outline: Motivation and workflow of the Ignite system

1. Business streamlining in a retail environment

All businesses are always looking to improve performance and become more profitable. Although there are myriad factors and complications involved in achieving this objective, ultimately there are two fundamental principles towards achieving this: i) to increase sales and thereby increase gross revenue, ii) to reduce operating costs involved. These two factors are often deeply interlinked rather than mutually exclusive in terms of business analytics; a reduction in a businesses operating cost, quantifiable gains in efficiency and productivity, and improvement in sales performance are often found through a streamlining of the entire process from raw "inputs" to value added "output" at point of sale.

The "Ignite" system described in this document is an attempt to address both of these factors. It was developed with the primary objective of reducing the operating cost of the company by improving the productivity of the staff thereby reducing capital expenditure on labour. Equally, by improving the availability of product on the sales floor, the company is maximising potential sales performance.

A detailed analysis of the actual current application and implementation of the system will now follow.

2. The "Ignite" system

The Ignite system consists of two deployable components: i) a set of handheld "texlon" guns, running an Android application, operated by shop floor colleagues and management staff; ii) a "backend" infrastructure of the numerous database, POS, and ancillary IT systems that the guns interface with and are required to run the retail business. This document will focus on i), and scrutinise the effectiveness of the system from the perspective of the day-to-day workflow of a shop floor colleague actually using the system: in other words, its actual implementation in practice, *in situ*.

3. Ignite hardware: the "texlon" gun

The system runs on a so called "texlon" gun. This essentially consists of a small modified Android phone running custom firmware on bespoke hardwear. The phone/screen has an extended battery pack, and laser barcode scanner, upon which is mounted a handheld trigger for convenient operation by hand. Colleagues interact with the system via the touchscreen and can input information into the system by scanning relevant barcodes of products with the scanner.

4. Workflow of the Ignite system

The workflow of the Ignite system is the following, occuring on a daily basis:

1. Input the available stock.
2. Correct the system wide counts for selected lines of stock in the department - i.e. update the "perpetual inventory" information for affected lines in the central store database.
3. Replenish the shelves at set intervals as stock gets sold from the available backstock.
4. Provide colleagues with a handheld device supplying immediate information regarding both the quantity and location of any particular line of stock.

Use of the system also provides a large amount of data that in theory is potentially useful from a business analytics perspective, and this will also be discussed.

§2 - The Intended Process/Workflow in detail

The following is a step-by-step outline, in brief, of the intended/specified process under the Ignite system.

i) The workflow

1. New stock arrives in one or more deliveries during the night (typically between 10PM and 3AM). These deliveries are "booked in" by warehouse staff. This stock gets added to the store inventory as per the specific data associated with the delivery from the logistical center/central depot.
2. Night shift colleagues "work" this stock manually. In short, they attempt to maximally fill the shelves by systematically working through the new delivery stock, and by working through the remaining leftover backstock from the previous day.
3. With the shop floor filled, all remaining additional stock is "racked back" by the night shift workers. This consists of neatly grouping/stacking each line of stock, appropriately date rotated such that the items with the shortest remaining shelf date are placed on the top, new stock at the bottom. All the stock should be ordered and as neatly accessible as possible, ready for day shift colleagues to use to replenish stock sold during the day.
4. The morning shift staff (typically starting at 5AM or 6AM) then use the Ignite system to "bin in" the backstock contained in the chiller. "Binning in" consists of individually scanning the barcode on every single boxed or cased item of stock present. Once complete, this "bin" represents the sum total of backstock currently available that is no presently on the shop floor.

5. Next, staff now make corrections to the actual stock counts by doing "exceptions". As a result of the binning in, the system is now able to calculate, by extremely simple arithmetic, the sales floor "count" of every individual line of stock. This calculation is made by simply deducting the binned count from the total overall perpetual inventory/overall count. It is this sales floor count that staff will manually confirm and check by going onto the shop floor and physically counting the actual stock present. All exceptions should be complete by 9AM.

6. At 9AM, with the stock "binned in", and all counts corrected as a result of exceptions, the first "pick" is made. A pick is the process where the Ignite system is asked to generate a list of stock that now needs to be taken out of backstock and worked to replenish the shop floor. For each line of stock, there is a data field called the "max shelf". This adjustable field simply determines the maximum number of units of stock the shelf is designated to accommodate. Each line of stock also has a "case size" which specifies the multiple of units it actually arrives as when it gets delivered. As soon as the current sales floor count indicates at least one case can be brought onto the shop floor, the system will generate a pick for the maximum number of cases that can be taken on the shop floor to restore the stock up to, but not exceeding, the current max shelf setting. For example: If the max shelf setting for some sausages is 12 units, the current sales floor count of those sausages is 5 units, and the case size is 6 units, the system will know that one case of sausages can be taken out to replenish. If the sales floor count was 0, two cases would be specified to replenish. If, on the other hand the sales floor count was 7 units, no such replenishment would be generated.

7. These "picks" should occur at 9AM (as described), 11AM, 2PM, 5PM, and 8PM throughout the day. The 9AM, 5PM, and 8PM picks are all one hour long "windows"; the 11AM and 2PM picks are two hours. Staff have this time limit, starting on the minute on the hour, within which they must have generated and complete a full pick. The system will only score the staff on the first pick generated by the system within each window. The pick can occur at any time within the window provided it is generated and cleared within the specified time window. Provided it is cleared within that time, it is considered "green" and the pick has been accomplished on target.

8. Once the 8PM pick has been completed before 9PM, the "day" is essentially complete and the store/staff are scored by the system to evaluate their performance. Night shift then starts at 10PM and the whole process as outlined is repeated.

ii) The idealised process

Each day, all stock has worked and excess "racked back" by night shift so the shelves are initially full, the backstock has been "binned in" by morning staff, necessary stock adjustments made by completing "exceptions", and all the stock has been replenished throughout the day by completing the five picks made throughout the day at the designated time windows. Stock counts and levels are therefore always exact or corrected on a daily basis, the shelves are maximally full with the available stock, and the shop floor is perfectly

tidy as staff are expected to simply tidy the shop floor when there is no remaining stock currently outstanding to be picked and worked onto the shop floor.

Furthermore, the system has an in-depth data trail with an exact time history of every single stock adjustment and stock pick by the exact colleague/individual who is logged into the gun; in short, every single action the colleague has taken with stock throughout the day,

§3 - Analysis - Actual implementation and use in practice

The following will now detail the actual impact and result of the system, and also detail how the "law of unintended consequences" entails from a comprehensive failure to account for how the system actually performs, and above all, gets implemented in practice. This analysis will look at each stage/component of the process and analyse the reality versus the intended practice. It will also compare this to the prior, pre-Ignite, manual method of working and use that as the basis for assessing whether the system has brought the intended benefits.

1. Texlon guns

With Ignite

In order to use this system, each member of staff needs to have a physical texlon gun in hand or access to one. However, here we encounter the first major problem. Either because there are in fact simply an insufficient number of guns for the store, or because there has never been any established system for members of staff to appropriately access and store the guns at the start and end of shifts, the actual result is that upon commencing a shift of work, the prevalent experience for most members of staff is an inefficient quest, sometimes of a considerable length of time (30-60 minutes is not unusual), where they have to search all around the staff areas of the store, and by asking around, in an attempt to locate a suitable available handheld gun. Similarly, because no regime of appropriate battery charging has ever been implemented, it is often the case that upon obtaining a gun the member of staff then has to waste further additional time trying to find a fresh rechargeable battery to power the unit. Arguably, this delay alone largely negates most of the supposed productivity gains the system might bring.

An additional complication further arises in that the lack of any installed or appropriate storage points, either in the backstore or shop floor, means then when working stock it is frequently easy to misplace the physical gun, since generally both hands are required in order to retrieve, open and work the stock from its boxes/cases.

Pre-Ignite

The lack of physical guns was never an issue pre-Ignite, since no such handheld guns were generally required, so there was no wasted time searching for one: the member of staff simply immediately got to work on the backstock/shop floor from the moment their shift started.

2. Binning in

With Ignite

In order to create the "bin", every single barcode on every single case of stock needs to be scanned. The stock either comes in cardboard boxes, or in plastic trays containing one "case" full of stock. This therefore necessitates the principle of "one place for each given line of stock". It also necessitates that one has sufficient space to be able to access, in a timely manner, the barcode for each case of stock. It should be noted that the system does allow one to scan a barcode and specify a multiple if you have many such cases/items of the exact same particular line of stock all gathered together.

This is an extremely labour intensive process.

A typical overnight delivery on the fresh department might consist of 20-30 large cages of chilled stock (each of which is approximately the size of two full size washing machines stacked on top of each other, completely densely packed with small boxes of stock), 10-12 full size warehouse pallets of produce stock, a further 10-20 dollies of produce stock (each has two columns of trays stacked to shoulder height of an average adult person), and similarly 10-20 dollies of meat stock.

The notion is that night shift workers will have fully worked all of this new stock, and racked any excess stock neatly away in the backup chiller. However, in practice, night shift workers never even approach completing all of the overnight delivery, as it is simply impossible given the number of staff employed in the time they have. Worse, not only do they fail to work through it all, they have insufficient time to even rack it all back. To severely compound matters further, the actual backup chiller is physically too small to accommodate all the stock properly racked away; at peak times of year, it even struggles to accommodate all the stock even when maximally packed in a totally inaccessible manner door to wall, with no space left to walk around or reach any of the stock.

Given that the system is predicated on scanning each and every barcode in order to enter the stock onto the system, in practice this means that members of staff may have to unpack full cages of stock, simply to scan all the barcodes, to then have to repack the entire cage. This is because the racking in the chiller is completely full of existing backstock from previous days. Members of staff also find themselves forced to violate basic health and safety regulations by using dangerous working practices to even physically gain access to stock that is buried in an entirely inaccessible manner.

The net result of all of this is that the typical 3-5 members of morning staff will have to spend several hours binning stock in, in a chiller operating at 0-3C with no provision of appropriate insulated clothing for these temperatures. It should be noted that very early on in the morning (5AM onward), home shopping staff are directly picking stock from the shop floor in order to fulfill internet delivery orders, so a considerable amount of stock is already getting sold by this point.

Pre-Ignite

There is a stark difference compared to pre-Ignite. Instead of manually scanning items of stock, staff would simply be dragging entire cages of stock onto the shop floor in order to fully replenish and fill any gaps left over from the night shift. Instead of typically three hours spent scanning barcodes, in the backup chiller, off the shop floor, staff in fact spent those three hours filling the actual shelves and finishing racking away, or otherwise tidying and organising any remaining stock..Additionally, because all the staff were not in the chiller for such an extended period of time, most staff members were generally present on the shop floor for the duration, ready to assist any customers that were present and requiring help.

3. Exceptions

With Ignite

The system calculates expected shop floor counts based on the quantity entered when creating the bin in the morning. Based on various algorithms (the exact criteria of which are unknown to this author), it will then select a substantial number of these to check as "exception" counts. Therefore, any inaccuracies in creating the bin will be reflected in inaccuracies in terms of the *expected* shop floor quantity. Furthermore, given stock on the shop floor is not necessarily in just one place. Lines that are on promotion may be in two or possibly three separate locations. Unless the particular member of staff is fully aware of this fact and of every single shop floor location for the product in question, they are liable to input an incorrect count. Since promotional lines on the end shop floor gondolas change on a weekly basis, this is a serious and persistent problem. Moreover, given the extreme difficulty outlined above due to inadequate space to appropriately rack stock away, and the huge volume of stock, and the resultant inevitable consequence of human error generally (particularly compounded by unrealistic time pressures), the net effect of repeatedly doing stock counts every single day is not an improvement in stock accuracy, but in fact the diametrical opposite; i.e. a systematic reduction in accuracy. Accurate stock counts are now predicated on a daily basis on creating an exact bin, and counting all required lines generated by the gun flawlessly, at a time when the stock is actually at its heaviest (at the start of the day). What occurs in practice is that the perpetual inventory count for a line will go up by say 25 units, only to be corrected back down by 25 units a few days later. Essentially there is an endless process of fluctuating counts going up by a certain amount,

then getting reduced by an almost identical amount, due to fundamental human errors involved in the process itself, rather than *actual* changes in stock quantity.

Like the binning in process, the exception process is extremely labour intensive. It is not uncommon for each member of staff to have in excess of 100 lines to count. Given the dubious quality and therefore value of the data obtained due to inaccuracies, this is time lost that previously was spent either working stock or tidying the shop floor. Again, home shopping staff are draining the stock heavily throughout the morning, so this is yet further time not spent actually working stock and refilling the shelves.

Pre-Ignite

A dedicated process colleague would monitor and adjust counts during the day, and by doing a "gap scan" in the evening when the shelves and backup are considerably emptier. They would also consult with members of staff on the particular section/department who would inform them of any counts they had noticed/believed there was a significant discrepancy on. Since their job was specifically tailored to ensuring stock accuracy, they were generally aware of products in multiple locations and of results obtained on specific lines from previous days.

Furthermore, the gap scan part of the process still occurs under Ignite, thus further negating the value of doing a whole host of counts that are in many cases already likely to be adjusted/corrected later on in the day anyway.

Since colleagues were not spending an hour or more doing exceptions (as with the binning in process), again, they were previously free to actually be working stock and present on the shop floor to assist customers.

4. Picking

With Ignite

At the set pick windows, the member of staff instructs the system to generate a pick. Clearing this pick then necessitates finding each and every item of stock on the list, scanning the barcode on the box/product, placing it on a separate cage/trolley/dolly/flatbed in order to take it to the shop floor, then unpack and neatly fill in the shelves correctly rotated.

Given the difficulties described above with creating the bin, these same difficulties are then essentially replicated during the picking process; the item of stock required, may, in fact, be buried right at the very back of a cage and require unpacking all of the other stock to get at it.

As with every other step of the process, Ignite has introduced a substantial labour overhead, as finding each specific item can frequently be a time intensive process.

Furthermore, whether the item will actually fit on the shelves, again, is dependent on the data specified into the system in terms of the bin, shop floor count, and max shelf setting being precisely and absolutely correct. For reasons described above, it should be increasingly clear that this is frequently not the case. Consequently, stock is getting picked, taken out to the shop floor, only to return, because it was never actually required for replenishment in the first place. This matter is further compounded by the fact that head office will arbitrarily change max shelf settings in an unannounced manner on particular lines for no logical or apparent reason, even after effort has been made from an experienced member of staff setting them to an appropriate number to optimise the sales and most efficient use of space on the current shop floor display.

The system has no method of differentiating any lines by any method of prioritisation or present availability of suitable near-identical substitute items. For example, if you have six different sizes of chicken breasts packets on sale, and one is off sale, replenishing this is clearly of less importance than, for example, replenishing large beef joints, for which there is no available substitute from amongst the other beef lines. In short there is no implementation of an algorithm that selectively orders picks based on any method of prioritisation. This type of intuitive intelligence is a natural human asset in an experienced member of staff. Such a "prioritisation algorithm" is necessary because at peak times stock will get sold off the shelves at a rate faster than can physically be replenished given the current staff allocation. Therefore the optimal strategy is to prioritise picking of particular lines of backstock that have scarce or no suitable substitutes, provided physical access is currently practicable at that given point in the day. The system is not able to offer anything like this sophistication, which is in fact a salient basic feature of a competent member of staff working manually.

Additionally, in practice, on busy days - particularly at the weekend - the system of racking back, only to then later pick it, is in fact creating two laborious jobs, which previously was avoided entirely by simply taking the entire cage/dolly of stock onto the shop floor and putting it straight onto the shelf in one fell swoop.

There is one other problem of even greater severity. The system only knows that an item has been sold once it has passed through the till, and the customer has actually purchased it. Yet the time delay between a customer placing an item of stock in their basket and purchasing it, can, and often is, a considerable delay, and in fact is frequently as much as one hour if the customer is doing a large shop. This means that lines of stock can — and do — go completely off sale in the time periods between set pick windows.

Pre-Ignite

Working manually, there were two basic methodologies. First, a member of staff could go out onto the shop floor for the section in question, and either make a handwritten list, or simply note down in their head which products were selling through and needed replenishing. This method is highly effective on quieter/slower days with smaller numbers of sales. Second, there was the systematic method of "work through everything" throughout the day, racking back what was left over. This apparently inefficient method, was, in practice, considerably

more efficient than the Ignite method, due to the fact that all of the perceived efficiency gains of Ignite are lost due to the incredibly labour intensive overheads required to ensure the information is continually perfect, the sheer amount of time lost that would ordinarily be spent physically reducing the amount of stock leftover to place on the shop floor (especially on high volume/busy days), and the sheer time cost of continually having to access individual awkward items. Since large amounts of the stock would be left/stored on cages (that would either not be able to be racked back, or was deliberately not racked back), at an appropriate point in the day after a few hours of sales, the *entire* cage of stock could be taken out onto the shop floor. What would happen in practice is that *most* of this stock would in fact now successfully be used to fill the shelves, with only a small amount left over to rack back in the backup.

The essential net result was that the Pre-Ignite system method of working allowed for considerably more stock to be worked in less time, and additionally, there was far more time available for actually working this stock, since it was not spent putting large amounts of data, frequently erroneous, into a handheld system.

Finally, unlike the Ignite system, a member of staff can immediately spot whether a line of stock needs replenishing simply by looking, as generally speaking customers do not return stock, so in effect the item is actually "sold" the moment they have removed it from the shelf. This time delay can be serious on busy days, as some lines may need replenishing more than once in an hour, let alone several hours later at the next pick "window". When under pressure, they can also select and prioritise which lines should be filled first based on order of importance in terms of sales and the availability or not of alternative substitutes for customers.

5. Software bugs

Despite Ignite being approximately two years old in terms of "going live", the system still suffers from a number of crippling bugs and simply indefensible and severe performance issues. Two major ones will be briefly highlighted:

i) Egregious picking algorithm flaw: Sometimes the system will tell a colleague to pick an item of stock, even though it *violates its own picking criterion* based on the data it presently has. For example, according to the system, it may believe that there are 20 lasagne ready meals on the shop floor; the max shelf might be specified as 24; the case size is 12. Basic and entirely obvious arithmetic states that in such an example, a pick is not possible. Yet the system may still insist, on some occasions, that one should pick the case, even though, as in this example, it would take the shop floor count to 32, considerably above the max shelf setting of 24. This is a fundamental bug, and one that occurs sporadically. The Ignite development team choose to deny the presence of such a bug, and insist the error is due to the member(s) of staff incorrectly interpreting information or inadequately comprehending the operation of the system. This despite the fact that knowledge of this exact bug is widespread amongst all staff members. When pressed further, they are unable to explain the presence of what is in fact a bug that would be classed as "critical".

ii) Generalised and unworkable tardiness: The system is frequently excessively slow, and despite running on what is presumably modern powerful smartphone hardwear, will frequently freeze, be sluggish, and display persistent "loading" screens. Given continual time pressures, a delay a couple of seconds after scanning every item of stock can become serious when a staff member has many hundreds of items to scan. The system displays a noticeable fluctuation depending on overall system load; the problem may therefore be in the backend infrastructure rather the actual handheld unit. Regardless, the end result is the same unacceptable performance at a user level.

§4 - Summary/Results: Claim versus reality

Claim:

- Backstock entered into a fresh "bin" every morning. Resultant counts/exceptions made every day equate to more accurate overall stock levels. More accurate stock levels result in less waste and less lost money due to out of date stock or poor shelf availability of product.

Reality:

- Bin is almost never actually accurate due to the volume of stock, insufficient provision of staff, and grossly inadequate backup space in chiller.
- Labour intensiveness/time consumption required to create the bin is time lost actually working stock. Net result is *emptier* shelves, *more of the time*. Further result is accumulation of stock building up in the backup, making creating an accurate bin on subsequent days even more difficult.
- Stock counts have actually become more *inaccurate*, not more accurate. Errors in bin are not only frequent but in fact completely inevitable, on a daily basis, due to the difficulty in accurately scanning every single item faultlessly due to the severe stock congestion, compounded with multiple locations of stock on shop floor.
- Continually having all members of staff changing stock counts every day is too many people making too many multiple adjustments — principle of "too many cooks spoiling the broth" to use the colloquial term.
- Stock adjustments are now getting made at the most inopportune moment possible from an accuracy point of view: first thing in the morning, when the stock levels are at the highest.
- Length of time involved in doing the exceptions (and other Ignite processes) take time away from working stock, meaning that stock levels in the backup are *worse*, not better. This accumulation results in more short dates, and therefore a *larger* amount of stock reduced or wasted due to exceeding sell by date.

Claim:

- Ignite picking system only ensures stock that needs picking gets taken out. All stock than can possibly be replenished gets detected by the system. Availability of stock on shop floor improves.

Reality:

- Serious and as yet unfixed bugs in the picking algorithm on the Ignite system occasionally generate entirely spurious picks.
- Almost permanent and unresolvable errors in the bin in practice (due to time constraints), in the shop floor count, and in the max shelf setting mean that many of the picks are irredeemably inappropriate or incorrect.
- System only generates picks on items when they have sold through the actual till system — this time lag can be a severe issue with popular lines on busy days.
- System picks items regardless of their actual physical accessibility in the backup as it has no data or concept with which to process this information. Given the space constraints, this introduces an intractable labour overhead as time is wasted retrieving individual awkward lines rather than focussing on reducing the overall backup stock level as quickly as possible, thus freeing up space/accessibility to the remaining stock.
- An experienced member of staff can more quickly and more efficiently identify and prioritise *what* needs to be taken out, *when* it needs to be taken out. In short, they can *task manage to a much finer level of granulation* than the system is capable of. The system has no heuristic method of assigning picks by priority.
- Labour overhead due to the binning, exception, and then finally picking process means less time available to actually fill shelves. Net result is considerably *worse* rather than better stock availability.

§5 - Cost/benefit analysis

Benefits:

- Ignite compiles a data history for each colleague, accumulates data as to the apparent contents of the "bin" and also accumulates data as to when an item has been *nominally* picked[1]. These benefits are potentially useful for business analytics, and potentially useful if a company wishes to institute a top-down surveillance culture on its employees, rather than trust that they are able to accomplish their job roles properly under correct guidance and supervision from their managers.

- Ignite also generates a series of *nominal* performance metrics and *nominal* quantifiable measures by which store performance can supposedly be measured.

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[1] When it actually appears on the shelf on the shop floor is an entirely different matter and depends on the specific physical actions of the colleague, none of which is trackable by the system.

Costs:

- The data history and surveillance benefit is arguably only of value if the particular colleague signed in on the gun is the actual colleague using it; otherwise it could correspond to any employee present in the building. The company would be better advised to spend money building the culture it wishes to create rather than create an environment that operates on measures of accountability that are in fact based on entirely spurious factual data.

- At every stage in the process, Ignite introduces *huge labour overheads that comprehensively outweigh, by a significant factor, any productivity gain* it might supposedly achieve by superior picking/restocking performance, and accuracy of stock counts.

- In practice data is likely to be more inaccurate at every stage; precisely the opposite of what is intended. The Computer Science principle regarding data of "garbage in, garbage out" is salient here.

- If the objective was to reduce the overall labour demand, the effect has been the opposite. The system has introduced a number of steps, none of which actually *directly result in stock being placed on the shop floor,* and none of which necessarily even generate any meaningful data. The net result is that stock is getting worked more slowly and staff are spending increasing amounts of time doing tasks that bear no actual relationship, or a very tenuous one at best, to any activity that directly contributes or improves the profitability of the company.

- The increased buildup of unworked stock is driving waste up due to an increased amount of stock reaching sell by date.

- The prodigious expenditure on the system would have been better spent on appropriate staffing to ensure high standards on the shop floor, superior customer service due to available members of staff, and stock getting worked at a much faster rate. Since the actual process of working stock is unavoidably a physical manual activity, until robotics has sufficiently and dramatically advanced far beyond any currently available technology, *there is no productivity gain to be had in computerising the process if it neither increases the base efficiency and if it also results in a reduction of time available for the basic physical task of actually working the stock*.

- Ignite has in fact created a whole series of problems that never were problems prior to its existence, and created a series of time intensive tasks that did not exist before, none of which directly improve the base efficiency of processing the actual stock.

- The particular performance metrics it generates bear no correspondence to reality or reflect in any meaningful way the actual store performance. Every single metric is straightforward to manipulate by any member of staff that understands how the

system works. Worse, this is essentially what every experienced member of staff in the entire company *is in fact necessarily compelled to do*, in order to actually complete their job objectives given the grossly unrealistic current time and staffing resources. The prior existing metrics available from the old system generated the only required trackable measures that were necessary, and did actually bear meaningful information relevant to performance (sales, OSCA, gap scans, and the like).

§6 - Conclusion

The implementation of the Ignite workflow entails specifically binning in stock by a set time, completing exceptions by a set time, then proceeding to complete the stock picks during each time window throughout the day. Based on this information, an overall percentage score is calculated on a per store basis in achieving these metrics.

As a result, these set targets now form the key metrics by which a colleague's "performance" is assessed. At a store level, this same data is used to assess overall department performance. At a company level, this same data is used to assess each stores respective performance in its given region against other stores.

There is a fundamental discrepancy between the intended use and workflow of the system and the practical reality of its use. The primary driver of this discrepancy is totally insufficient and inadequate staff provision, coupled with, and exemplified by, a deeply flawed idealised model of how the system should work versus the practical reality of what is required to appropriately replenish and process stock in the real world. As described above in detail, Ignite is actually a much more labour intensive to use; vast additional work is required to provision the system with all the necessary data throughout the day. Given the frequently impossible objectives relative to the staff provision, all staff therefore are both complicit and fully aware of how to "game" the system in order to meet the necessary spurious performance metrics and actually free up enough time to accomplish the required real world work necessitated in getting through all of the stock. There are several easy methods to do so:

1. Create a partial, incomplete, or "false" bin. Stock not actually scanned into the bin is calculated by the system to be already present on the shop floor; so much the better, as it will make emptying the system picks that much easier as they will be far smaller; the system already believes the items in question are on the shop floor.
2. Simply accept all default exception values rather than actually physically counting the stock. Since the exception/shop floor values are predicated on having a 100% accurate bin, if this is not realistically plausible given time/stock constraints, it therefore means that all the "shop floor" stock calculations will similarly be skewed. The solution is to not change the system's extrapolated counts, since the overall values are largely likely to be correct in any case, and extra effort spent properly

counting them in such a case is actually counterproductive in that it generates false overall counts.
3. Rapidly empty the "picks" during each window by simply scanning barcodes on the shop floor or by manually picking on the gun, *without* physically picking the actual stock itself. The system has no way of determining whether an item is actually physically on the shelf or not. It simply goes on whether or not it has been "picked" by the software/colleague. The instant it is "picked", it considers it to be immediately on the actual shelf.

Doing the three steps above will provide a "green" almost perfect score on the Ignite system. It actually bears no representation to reality in terms of what stock has actually been worked or physically moved by staff, or what stock is actually necessarily on the shop floor.

Naturally, such a scenario seems rather absurd since it consists of a huge amount of time spent doing entirely pointless tasks, since it is not even generating any factually correct data. Unfortunately, this is precisely the absurd scenario the system has actually brought into existence. Since this set of Ignite metrics has come to dominate and has become the prime criterion of perceived store performance, and since all staff know this is the principal method of evaluating their performance, then, given the grossly unrealistic workload, all staff therefore do whatever is necessary to ensure compliance with these metrics, regardless of whether that is "gaming" the system or not.

As a result of this, there has been a shift away from what should actually be the primary purpose or any retail venture: namely filling the shelves as quickly and efficiently as possible. A retail store generates profit by selling stock above the cost price from its shelves. Ergo, the more quickly stock that is currently in demand can be refilled from the available backstock, the better the potential for maximising sales. This is a fairly elementary concept. However, this is no longer necessarily happening: colleagues are now actually spending a larger part of their day inputting information into the handheld texlon guns. Unfortunately, for reasons that should now be abundantly clear, often this information is not even actually correct, so is therefore of negative business value. Ignite has therefore actually resulted in a "double negative" effect: i) consuming time that would otherwise be spent working stock, which directly affects store profitability, and ii) gathering large amounts of incorrect data that is having the opposite to intended effect on overall stock inventory accuracy and usefulness from a business analytics perspective. In short, what we have here is a perfect expression of what is known as the "law of unintended consequences" through the rigid application of a system within any due foresight or appropriate analytical consideration, and the enforced wholesale blind adherence to a system that actively interferences with actual individual staff expertise and experience built up from years of work on the shop floor. The impression is that the system has been developed externally by software engineers who have never been provided with any useful real world information or feedback during the development as to whether or not it works in practice.

The difficult problem is that the huge investment in this expensive system, costing in the millions, has created its own political traction within the organisation. Admission or recognition of failure, or indeed even of deficiency is not generally admissible, so there has

been precisely zero interactive dialogue between the internal team that has created the system and the actual staff that are now required to actually use it in the real world.

§7 - Future prognosis of Ignite and the business

Experiential evidence suggests that the almost messianic belief in the intrinsic value of the system in its current state from senior management precludes any meaningful dialogue regarding its implementation, accuracy, use, or value. It seems that there is little interest in feedback from the members of staff that actually use it on a daily basis. Any suggestions made that highlight the labour intensiveness of the process, and the inadequacy of the staffing provision made to use it, paradigmatically results in a response suggesting that the failure actually lies in inefficient, poorly trained, lazy, or insufficiently motivated members of staff who are either unaware or unable to accurately follow the outlined process. At no point are the criticisms of the system, as summarised above, actually taken seriously. Any consideration made as to whether an adjustment should be made either to the internals of the system, the particular workflow implementation of the system, whether it should be re-engineered, or simply whether the system should be used selectively on less busy days, are not entertained.

This is a missed opportunity of great gravity, as the current state of the system relative to its intended business objectives is dire, and by ignoring feedback from staff the opportunity to craft it into something that genuinely improves productivity has been lost. The system in its present state is unfit for purpose, since it accomplishes none of its intended goals, and far worse, in the process of failing to meet those goals, actually impedes the completion of basic tasks that are genuinely essential for business profitability. This is surely the exact opposite of the intended goal when computerising a business system and process.

Unfortunately, this breakdown in communication increasingly seems to be a feature of the business as a whole, which is a worrying development in the fiercely competitive and dynamic retail sector.