BUSINESS CASE FOR REPLACEMENT OF PARKING MANAGEMENT AND OPERATING SYSTEM

"TRAVEL PLUS"
REGENT ARCADE

Authors	Owen Parry, Jon Hyde
Owner	Mike Redman (Project sponsor)
Document location	S:\Special Projects\parking systems\business case\Parking business case v1.6.doc

Version number	**Date**	**Change summary**
1.0	28/03/2011	First draft
2.0	08/07/2011	Business case updated for inclusion with July Cabinet report

This document requires the following approvals:

Mike Redman, Cllr John Rawson (Portfolio holder for built environment services), Cabinet

This document has been distributed to:

Mike Redman, Owen Parry, project team, project board, Cabinet

Contents

Background and strategic context

During 2010/11 the Head of Integrated Transport & Sustainability instigated an audit review of Parking Services now incorporated into the "Travel Plus" brand; the audit review found that over a number of years, little investment had been made in the parking management and operating systems at CBC.

The review concluded that CBC should consider investment across the CBC parking facilities portfolio, thus ensuring not only are we future-proofing the infrastructure that supports Cheltenham's move towards becoming a "Smarter Travel Town" but in addition the Council delivers cashable savings, improved customer satisfaction and better overall performance.

The first stage of the investment is directed at the existing management and operating systems in Regent Arcade multi-storey car park (MSCP), which are now considered at the end of their expected life cycle. A solution will be purchased which will provide a platform capable of being extended to additional car parks in due course.

As part of the review and evaluation process, CBC undertook a 'soft market test' by inviting a number of suppliers of parking management and operating equipment to present their systems. Part of the exercise was to test the assumptions being made regarding customer needs and expectations through a "Smarter Travel Town" experience.

It is clear from the review that the demand from customers for smarter choices is a key driver in the market place. It is therefore essential that CBC positions itself to meet that demand and ensure it is able to grow with the market as it evolves.

Parking today is about the use and management of space linked to an experience; it is about complementing a destination and enabling customers to have a rewarding experience. In summary, visiting Cheltenham needs to be seamless and hassle free.

In addition to the customer visitation we need to consider how we support a "Cheltenham Experience" where we are able to offer options through our parking experience, such as incentivised parking, where as a customer, you can combine your day out in Cheltenham with a range of leisure and retail experiences.

The market place should be customer led and supported by advances in technology, for example Automatic Number Plate Recognition (ANPR) which supports services like virtual permits, less manual engagement in the operation and the ability for the customer to self-manage their parking choices. There is a demand for systems that can enable the use of smart cards, smart phone applications and cashless payment options.

The choice for CBC is clear, invest now in Cheltenham's move towards becoming a "Smart Travel Town" and support this by investment in management and operating systems that will address the medium to long term customer needs, to achieve this goal. This will also reduce the current staffing need and facilitate a reduction in revenue expenditure.

Objectives

This procurement has the following objectives:-

1. Reduce the ongoing cost of operating the Regent Arcade MSCP through the installation of a lower maintenance and more automated parking solution;
2. Protect existing parking revenue streams by providing the customer with a reliable, accessible, easy to use and flexible parking solution;
3. Ensure that our parking payment systems remain secure and compliant with industry standards;
4. To provide a technology platform to support CBC's Smarter Travel Town strategy implementation over the course of the next five to ten years.

Revenue (operating) costs (£000's) for Regent Arcade in 2010-11[*]

Item	Cost (£000's)
Hire of outside services - Glevum Security	47.8
Equipment Repairs & Maintenance	29.9
Staffing	47.0
Total	124.7

Gross revenue (£000's) 2010-11

Car park	Revenue (£000's)
Regent arcade	985.5

Options appraisal

1) Invest in a new or upgraded pay on foot parking solution

Advantages

- The current system is at the end of its anticipated lifespan. Upgrading or replacing the entire solution will reduce operating costs as the new equipment will be more reliable.
- Depending on the type of solution selected, the new system will bring one or more of the following new features for customers: option to pay for parking over the internet; pay by mobile/smart phone; automatic number plate recognition (ANPR); pay by stored value card; ability to pay for your parking as you buy a theatre ticket / book hotel accommodation
- Depending on the type of solution selected, the new system will bring one or more of the following new features to parking service staff and managers: Improved management reporting; improved system security; ability to access and operate the system remotely; improved maintenance alerts e.g. coins about to run out, barrier damaged; ANPR enabling customer disputes about the parking tariff to be easily settled.

Disadvantages

[*] All costs presented in this document exclude VAT

- Higher capital cost than just upgrading the credit / debit card processing element of the existing system (option 2).

2) Upgrade only the credit and debit card functionality of the existing system to maintain compliance with financial regulations

Advantages

- Lower capital cost than upgrading the entire system (A quote of £44,150 exc. VAT has been received from the incumbent supplier for the upgrade).
- Compliance with financial regulations is maintained

Disadvantages

- This approach will not enable reduced operating costs as the rest of the equipment is still at the end of its life cycle and prone to failure, leading to an unpredictable increase in support and maintenance costs, lost income and reduced customer satisfaction levels.
- This approach does not give the customer the increased flexibility that is required in terms of payment options. Failure to keep up with the market may lead to the car park becoming less attractive compared to rival facilities leading to reduced patronage.
- This approach does not deliver the technological enhancements required to enable the council to support local businesses by offering seamless parking payment options while customers reserve entertainment tickets / hotel rooms etc.
- This approach does not deliver the enhanced system functionality described in option 1 for parking staff and managers.

3) Do nothing

Doing nothing is not a viable option as the equipment is beyond its due date for replacement and will become increasingly unreliable and expensive to support and maintain. Furthermore, upgrades are required (by January 1st 2012) to ensure that the current system remains compliant with industry standards for the processing of credit and debit card payments. A quote of £44,150 exc. VAT has been received from the incumbent supplier for the upgrade.

Disabling the credit and debit card facilities (rather than paying for the upgrade) is not considered wise due to the fact that customers clearly value this option – approx 22% of all parking fees are paid for in this way. Disabling credit and debit card payments could therefore lead to a reduction in customer satisfaction and a reduction in parking revenues.

The failure to introduce more automated and modern equipment will prevent the planned reduction in staffing levels at Regent arcade and the associated reduction in service operating costs. A reduction in staffing by 1.5 FTE has already been built into Bridging the Gap targets based on the assumption that the equipment upgrade would go ahead.

Finally, parking technology continues to develop apace and unless our facility stays up to speed with customer needs and expectations, it will lose ground to rival car

parks and become underutilised. Keeping up with the competition is vital to maintain current revenue streams.

Recommendation

Option 1 (Invest in a new or upgraded pay on foot parking solution) is the recommend approach as it enables the achievement of all four project objectives.

Financial benefits of upgrading the parking solution

Capital and revenue costs for a variety of solutions from three suppliers are shown in the table on the following page. The companies were not given detailed requirements specifications for the soft market test exercise, although they were asked:

- To focus on pay on foot solutions with an Automatic Number Plate Recognition facility.
- To quote for Regent arcade being fitted with six pay on foot machines.
- To quote for another car park being fitted with three pay on foot machines so that the team could gauge the likely cost of expanding the system in the future to cover additional car parks[†].

The companies responded by offering a range of solutions, both with and without barriers and ANPR systems. The solution types have been classified as follows:

Solution type	With barriers	With ANPR
1	✓	✓
2	×	✓
3	✓	×

A preliminary comparison of the solution types is provided in Appendix A.

[†] This business case presents the costs quoted for Regent arcade only. If in the future it is decided to extend the system to cover additional car parks, this will subject to a separate business case and procurement exercise.

Estimated costs for the new system including current costs for comparison (all costs exclude VAT)

See Appendix B: Exempt from publication due to the commercially sensitive content.

Please note that communications line rental is an additional overhead. This is currently £379.20 net per annum which covers the rental of two broadband internet lines. It is assumed that there will be no increase in communications line rental as a result of the system upgrade.

Estimated cost comments and assumptions

1. Staffing costs can be reduced by 1.5FTE owing to the installation of more reliable and automated systems.
2. The cost of all other overheads remains unchanged by the installation of the new system – e.g. electricity consumption, data / networking charges etc.
3. In order to achieve a maximum reduction in staffing costs, it will be necessary to remove the current exemption from car parking fees for blue badge holders. This change to policy will mean that blue badge holders can use the car park without any manual intervention from Civil Enforcement Officers. For the purpose of this business case, it is assumed that this policy change will be applied. If this policy change is not applied the anticipated reduction in staffing levels may not prove to be feasible.
4. The introduction of a barrier-less ANPR system (solution 2) would make it necessary for the parking administration team to begin to issue postal penalty charge notices (PCNs) for car park users who do not pay their parking fee. It is assumed that this extra work can be absorbed without increasing admin staffing levels.

Financial benefits summary

The soft market test indicates that the budgeted amount (see cabinet report Appendix B) will enable CBC to upgrade its parking system at Regent Arcade to deliver the desired functional, reliability and customer satisfaction improvements as well as annual operating cost savings in line with Bridging the Gap targets.

High level implementation plan

- Issue advertisement asking for expressions of interest – 1st June 2011
- Deadline for expressions of interest – 22nd June 2011
- Invitation to tender documents issued – 1st July 2011
- Deadline for receipt of tender documents – 22nd July 2011
- Cabinet approval for business case – 26th July 2011
- Evaluation of tenders complete - 12th August 2011
- Supplier presentations complete - August 2011
- Site visits, customer references, financial checks complete – August 2011
- Preferred supplier selected –August 2011
- Contract signed – September 2011
- Equipment manufactured and configured – October 2011
- System installed and live – November 2011

Key risks

ID	Description	Risk owner(s)	Date raised	Date reviewed	Impact score (4 max)	Likelihood score (6 max)	Overall risk score (impact * likelihood)	Risk mitigation actions / comments
1	The ICT department is at near full capacity. There is a risk that they will not have the capacity to support the project which could lead to significant delays.	Jon Hyde	9-Mar-2011	08/07/2011	3	3	9	The project manager will work with ICT colleagues to produce a realistic plan which fits around existing ICT commitments.
2	Changes to policy regarding blue badge holders could be controversial. If there is a lack of political buy in for the change, it may not be approved, which would lead to higher system operating costs (staff would need to manually override the barrier system to enable blue badge holders to exit without paying)	Owen Parry	7-Mar-2011	08/07/2011	2	2	4	The team will work closely with members and disability groups to ensure that policy changes are acceptable.
4	There is a risk that the project will fail to secure the level of funds required for investment. If this happens the procurement will not be permitted and additional funds must be sought to upgrade the existing system (to gain PCI DSS compliance) and maintain high staffing levels needed.	Owen Parry	9-Mar-2011	08/07/2011	3	3	9	The environment O + S committee, director of the built environment department, and portfolio holder for the built environment will be briefed on progress as the business case is developed.

ID	Description	Risk owner(s)	Date raised	Date reviewed	Impact score (4 max)	Likelihood score (6 max)	Overall risk score (impact * likelihood)	Risk mitigation actions / comments
5	The business case is predicated on the fact that the new system can be operated by fewer staff. If this assumption is incorrect, the forecast reduction in operating costs will be threatened.	Owen Parry	9-Mar-2011	08/07/2011	3	3	9	System reliability and level of automation will be key tender evaluation criteria.
6	If the new/upgraded solution is unreliable, this would lead to low levels of customer satisfaction and possible negative publicity, resulting in reputation damage for the Council. This would also lead to reduced income as customers choose to park elsewhere.	Owen Parry	9-Mar-2011	08/07/2011	3	2	6	A thorough procurement exercise will be undertaken (including site visits, customer references, supplier presentations) to mitigate the risk of selection of a poor quality solution. The system will also be tested thoroughly by staff while the car park is closed to the public, prior to the system going live.
7	The current system at Regent Arcade is unreliable. The longer the procurement process takes, the greater the chance of disruption for customers due to system breakdowns. System breakdowns incur callout charges and lead to reduced income, so the longer we operate an unreliable system, the greater the operating costs will be.	Owen Parry	9-Mar-2011	08/07/2011	2	2	4	The existing solution supplier has given a verbal commitment to provide a rapid response to 'system down' incidents. There is however no contractual obligation for this. The procurement will be completed as quickly as possible so that reduced operating costs can be achieved as soon as possible.

ID	Description	Risk owner(s)	Date raised	Date reviewed	Impact score (4 max)	Likelihood score (6 max)	Overall risk score (impact * likelihood)	Risk mitigation actions / comments
8	An asset management review of Regent arcade car park is under way. If the parking team does not keep the property department informed of upgrade to the parking solution there is a risk that the increased value resulting from CBC's investment is not reflected in the market valuation of this facility.	Owen Parry	9-Mar-2011	08/07/2011	3	2	6	Property department to be briefed on changes to the parking facilities throughout the project.
9	The owners and operators of the Regent Arcade shopping centre are key stakeholders in this project. If we fail to involve them in the project early, they may not buy in to our chosen solution and the implementation may suffer without their full cooperation.	Martin Quantock	9-Mar-2011	08/07/2011	3	2	6	John Forward (Regent Arcade centre manager) will be consulted at all stages of the project to ensure that the management's requirements are captured, and that the implementation plan is compatible with the centre's needs.
10	If the new/upgraded solution fails to deliver a positive customer experience (i.e. easy to use, convenient, reliable), then there is a risk that customers will choose to shop elsewhere in future.	Martin Quantock	9-Mar-2011	08/07/2011	3	2	6	Ease of use of solution, convenience, and overall customer experience will form a key component of the tender evaluation criteria.
11	If the cutover to the new system is not clearly communicated to our customers, then they may fail to operate the new system correctly leading to an increased number of fines being issued, and reductions in customer satisfaction.	Rebecca Banner	9-Mar-2011	08/07/2011	2	2	4	Detailed customer communications and system 'go live' plans will be developed to ensure that the transition to the new system is easy for customers.

ID	Description	Risk owner(s)	Date raised	Date reviewed	Impact score (4 max)	Likelihood score (6 max)	Overall risk score (impact * likelihood)	Risk mitigation actions / comments
12	If a barrierless ANPR solution is implemented the parking team will need to start issuing postal PCNs. This will generate extra work for the parking admin team. If the team does not have the capacity to absorb the extra workload, then staffing levels may need to be increased leading to higher operating costs than are currently estimated.	Owen Parry	27-May-2011	08/07/2011	3	3	9	An assessment of the admin team's capacity to absorb the extra workload will be undertaken. The process for issuing postal PCNs will be designed as efficiently as possible.
13	The project plan forecasts a launch of the new system in November. If any delays are encountered, the launch date will move closer to the busy Christmas period which should be avoided if at all possible (it's better to iron out system teething problems outside of peak periods to minimise customer inconvenience and the risk of reduced revenue).	Owen Parry	27-May-2011	08/07/2011	3	4	12	The procurement and system implementation will be given a high priority and completed as swiftly as possible to avoid going live in December.

Appendix A: Preliminary solution comparison

The parking team are very interested in Automatic Number Plate Recognition (ANPR) – a system which automatically records license plates, vehicle photos, and dates/times of entry and exit. ANPR complements pay on foot solutions and improves the customer experience by removing the need for the customer to carry around a ticket or token.

With a ticket/token based system, the time of entry to the car park is recorded on the ticket/token. The time is then read when the token/ticket is entered into the pay station before the customer exits the car park. The entry time is compared with the current time to calculate the appropriate fee.

With ANPR, the parking fee is calculated when the customer enters their licence plate number into the pay station. The system looks up the time of entry to the car park and the appropriate tariff is requested. Ticketless/tokenless solutions are lower maintenance as they have fewer moving parts than traditional systems.

ANPR solutions offer the potential for barrierless parking. With ANPR, the customer does not need to insert a token/ticket at an exit barrier to prove that they have paid and therefore raise the barrier. Instead a camera reads the license plate when the vehicle exits. The system then checks that an appropriate tariff has been received for that vehicle. If the tariff has not been paid, the vehicle will be flagged by the system so that a reminder can be sent. If the reminder is ignored a Penalty Charge Notice will be issued.

Some ANPR solutions include entry and exit barriers to reduce the incidence of drivers exiting without paying, and to provide a ticket/token backup solution which comes in to play when the license plate cannot be recognised.

The table below summarises the key differences between the three models of operation: Pay on foot system with barriers and ANPR (Solution type 1); Pay on foot system without barriers, with ANPR (Solution type 2); Pay on foot system with barriers but without ANPR (Solution type 3):

Table 1: Solution comparison

Feature	Solution type 1	Solution type 2	Solution type 3
Barriers	Entry and exit barriers required (more moving parts and higher system maintenance cost) Improved control over traffic flow – ability to prevent access if the car park is full.	No barriers means less moving parts and lower maintenance costs. Having no barriers may however not be desirable for Regent Arcade on health and safety grounds and because of the reduced control over entry to the car park. When the car park is full, it is helpful to prevent access so that the car park does not become over congested with customers hunting for a space. Without exit barriers, cars could potentially exit the car park at speed posing a risk to pedestrians. The introduction of speed bumps could mitigate this risk.	Entry and exit barriers required introducing more moving parts and higher system maintenance cost. Improved control over traffic flow – ability to prevent access if the car park is full. Improved safety – cars cannot speed in or out of the car park.
Penalty Charge Notices	Barriers prevent customers who have not paid from leaving the car park, so no postal PCNs are issued under the regular pay on foot system. Some PCNs are left on vehicle windscreens where vehicles have been parked across bay perimeters	Customers who exit the car park without paying must be issued with postal PCNs. Going barrierless will therefore increase the workload of the parking administration team. Fines are expensive to recover, so the Council wishes to keep the number of fines issued to a minimum.	Barriers prevent customers who have not paid from leaving the car park, so no postal PCNs are issued under the regular pay on foot system. Some PCNs are left on vehicle windscreens where vehicles have been parked across bay perimeters.
Security	The ANPR system ensures that vehicle	The ANPR system ensures that vehicle	No license plate details are stored.

Feature	Solution type 1	Solution type 2	Solution type 3
	license plates are logged and stored. This provides a wealth of information about vehicle movements which could potentially be of use to the police and security services. It is not clear however whether data protection legislation prevents the sharing of this information.	license plates are logged and stored. This provides a wealth of information about vehicle movements which could potentially be of use to the police and security services. It is not clear however whether data protection legislation prevents the sharing of this information.	
Ticket/chip coin entry and exit terminals	Where an ANPR system is implemented with barriers, the entry and exit terminals can operate as a backup system should the camera fail to read the car number plate. In this circumstance, on entry the barrier would not raise and the customer would instead take a ticket / chip coin. They would then use the system in the regular pay on foot manner (validating their ticket/chip coin at a paystation before leaving, and entering the ticket/chipcoin into the exit terminal to leave). This backup system means that no manual intervention is required when there is an ANPR mis-read.	It is possible to do away altogether with entry and exit ticket / chipcoin terminals with solution 2, leading to lower maintenance costs. Having no ticket/chip coin system does however pose a problem when license plates cannot be read, as there is no automated backup process for ensuring that appropriate fares are paid. This will lead to extra manual interventions.	Entry and exit ticket/chip coin terminals are required (with higher maintenance costs). The entry terminal issues the ticket/chip coin and writes the entry date and time to the token. For paper tickets, the date and time of entry is often visibly printed onto the ticket so that the customer can keep an eye on how much time has passed – and therefore how long they have left before the fee increases. This is not possible with a chipcoin. Before exiting, the ticket/chipcoin is validated when the customer pays at the pay station. On exiting, the ticket / chip coin is inserted into the exit terminal causing the barrier to be raised.
Pay on foot machines	These pay stations must enable both methods of payment calculation –	With type 2 solutions, the pay on foot machines must have an interface	As the customer simply enters their chipcoin/ticket into the pay station, there

Feature	Solution type 1	Solution type 2	Solution type 3
	customers entering license plate information and selecting their vehicle and customers entering a chipcoin / ticket.	enabling customers to identify and select their vehicle from all those currently present in the car park. Once the vehicle is selected, the relevant fee is presented and the customer pays. The additional step of finding and selecting the customer's vehicle (compared to the ticket/chip coin approach) adds time and complexity to the overall transaction. Elderly customers in particular are likely to find the extra step difficult which may lead to extra calls for assistance. Additional pay stations may be required in busy locations because of the extra time needed per transaction.	is no need to lookup their vehicle on the system. This means that transaction times are lower, and so potentially less pay on foot machines are required than in the ANPR setup.
Lost tickets / chip coins	The presence of ANPR means that pictures of cars entering the car park can be reviewed so that the correct fare can be calculated.	Provided that the customer's licence plate was correctly read on entry, they will not have a ticket or chip coin to lose, so there will be fewer incidents where customers need to negotiate the fare price with staff. ANPR also enables staff to go back through the images of vehicles entering the car park so that an accurate fare can be calculated even when there was a problem reading the licence plate. Dealing with misread license plates may	Without ANPR there is no way to establish which time a particular vehicle entered the car park, so in the event of a lost ticket / chip coin, the customer must negotiate a fare with a Civil Enforcement Officer, which is time consuming and can lead to an unpleasant confrontation.

Feature	Solution type 1	Solution type 2	Solution type 3
		however equate to as much staff time as dealing with lost tickets / chip coins in a non-ANPR system.	

Until detailed tenders are received it is not possible to conclude which type of solution would be most appropriate for Regent Arcade car park. All bids will be scored against a standard set of evaluation criteria to enable the selection of the best all round performer. It is conceivable that a hybrid solution combining elements from two or more of the solution types will prove to be the optimum solution.