



AUDIT AND GOVERNANCE COMMITTEE – 22 MARCH FOR INFORMATION

REPORT TO RISK MANAGEMENT GROUP – 7 FEBRUARY 2022

SECONDARY SCHOOL TRANSFER NOTIFICATION –POST INCIDENT REPORT

Introduction

1. Approximately 6000 children were due to receive their Buckinghamshire transfer test results on Friday 15 October 2021 by accessing a web-based system from 15.30pm. This was the first time this solution had been used for this purpose (in 2020, results had been emailed to parents). The system had failed by 15.40pm and parents were unable to access the results, resulting in distress for families and significant reputational damage for the Council. The failure of the test results system also brought down all of the Granicus supported CRM system which impacted all legacy county services and associated 'contact us' forms on the council's website. The test results system was reinstated at 18.46pm and the majority of parents had received their results by 8pm.
2. This report provides a detailed analysis of the incident and lessons for the future, drawing on feedback from a range of teams across the council involved in different aspects of the process.

Background

3. In 2021, there was a requirement to identify an appropriate way of communicating the results of the transfer test.
4. In 2019, individual letters for each child were printed and sent to primary school to distribute for the Local Authority and Partner schools. This manual process was not seen as the best option. In 2020, the secondary selection test took place in November, due to Covid mitigations. In that year, the test took place after the deadline for parents to express their school preferences. This meant that the Admissions team had already collected parents' current email addresses and were able to use those to communicate the test results. This means of electronic delivery of results had worked well. However, in 2021, the testing schedule reverted to a September test and test results had to be released to parents before the deadline for applying for a school place. The Local Authority does not routinely capture

email addresses until after applications for secondary school places have been made. As a result, the solution used in 2020 could not be applied in 2021.

5. Granicus (previously known as Firmstep) is a CRM system used by the Walton Street Customer Contact Centre, and this system also provides us with customer facing e-forms / digital processes platform (GovService) capability. The Council has 3 main CRM systems and as part of the Business Operations Service Review there is a project underway to consolidate on to a single CRM. Although there are 3 systems, the majority of BC forms and processes are built by a dedicated CRM Forms team in Business Operations. Sometimes services build forms and processes themselves in which case they are trained users (as in this case), or directly contract Granicus to do so. The teams who build their own forms are fully trained and have access to support and advice from the CRM Forms Team. There is a good level of expertise in Admissions, and an excellent level of expertise in the CRM (Customer Services) Team. In 2021, 446 forms were built or edited across the council.

Description of Incident and Contributory Factors

Development of Solution

6. It was agreed that a web-based solution would be used to release the transfer test results. This process had previously been used successfully to deliver Selection Review outcomes to 1000 parents simultaneously in January 2021. A discussion took place between the Admissions Team and The Buckinghamshire Grammar Schools as this was fulfilling part of a contract for the secondary transfer process. The process was taken to Headteacher Admissions Working Group (HAWG) who specified that the results were issued at the end of the school day on a Friday so that pupils were not affected by results being shared in public places such as the playground upon collection.
7. The new form was developed in September and was successfully tested within the Admissions Team. The CRM Forms Team also tested the form and no issues were identified.
8. The Admissions team liaised with both the CRM Forms Team and the Digital Team about the resilience of both aspects of the website - the static information held on Torchbox Wagtail (BC website provider), and the dynamic element (the form to check the results) on Granicus Firmstep.
9. The CRM Forms Team asked Granicus to ensure that they had sufficient capacity on their servers to accommodate the anticipated load, and to ensure support was available in case of problems. A call was raised with Granicus on 9 July 2021 to inform them that there would be a process involving 6,000 parents accessing their servers at 3.30pm on 15 October 2021. They were asked to confirm there was capacity for this. Granicus confirmed that this would not be a problem, but that they would scale up servers when the time came to ensure there were no issues. Granicus were contacted again on 11 October and confirmed on 12 October that the server scaling was going ahead. They also provided reassurance that support would be available at the time in case of issues.

10. The Digital Team secured similar assurances from Torchbox that the website would be able to cope with the volume of traffic.
11. The Admissions Team sought to ensure that arrangements were made for Granicus, the CRM and the Digital teams to be available during the period that the form went live. This was to ensure staff were available at the key time to deal with any traffic or other system issues as the timing was late in the normal working day. As there were no changes to IT systems, there was not an anticipated role for IT Services.
12. Three members of Admissions staff were set up with access to the Granicus Support Portal. They were also given an emergency telephone contact number. This was considered more robust than a single named person who could potentially be a single point of failure.

Liaison with Schools

13. All schools received spreadsheets of the results on the Tuesday prior to release and worked with parents to register them for the portal. Parents were informed of the process on the Wednesday though a letter sent home via schools. This provided them with their logon information and told them the time that it was available. It was different for out county and independent schools as the admissions team had a full set of emails for them because these children have to be formally registered to sit the test. This meant the team were able to use an email solution for these testers and they used the Notify email system which is a system that has been used in 2019 and 2020.

Liaison with IT Service

14. There was no change required to the Council's IT system for this process and so there was not an anticipated role for IT Services. On the evening of the incident, IT were needed to rule out a failure of the internal LIM server. The LIM server is a Local Integration Module which acts as a web server to process service request and to integrate between databases. They responded within 30 minutes and re-started the server. This did not make a difference to the issue, indicating that the server was not the cause of the problem.

Incident Response – Technical

15. A call was raised by the CRM Manager with Granicus at 15.43 when the issue with the form first became evident. A follow-up email was also sent, with an immediate response from Granicus to say they understood the importance of the form and have escalated to dev-ops team.
16. At 16.00, A message was emailed to all UK Granicus customers as below:

Granicus Issue Notification: govService Availability

New incident: Investigating

Granicus Engineering teams are currently investigating an issue with login / availability. Our teams are working on this issue as priority and further updates will be provided as soon as possible.

Product: govService

Updates on this issue will continue to be provided on status.granicus.com, for other issues or questions please contact us at Support.Granicus.com.

Thank you,
Granicus Customer Support

17. It was initially assumed by the Bucks CRM Team that this platform-wide issue was the cause of the forms being unavailable. i.e., it was an issue on the Granicus side unrelated to BC. The CRM Manager received a telephone call from Granicus support at 16.20 saying that there was an issue with the Buckinghamshire form which had had a knock-on effect on the whole UK platform. Granicus said they had isolated and disabled the whole Buckinghamshire environment as the issue with the form was causing problems across the platform.
18. The CRM Manager asked for the form in question to be disabled so that the rest of the Buckinghamshire environment could be re-instated. This was actioned by Granicus at 17.00.
19. The CRM Manager arranged for a Teams meeting between Granicus developers and BC officers to enable real-time communication to ensure the issue would be identified and rectified as quickly as possible. This also made sure that the process of investigation was transparent, and that colleagues from Education, Digital and IT Services could join the meeting and collaborate in real time. The Teams meeting started at 17.00 with the CRM Manager, the Granicus Director of Implementation and two Granicus developers, officers from the Education service, the IT service, and the Digital team.
20. The Granicus developers examined the form for errors, to try to identify the issue. No issues were identified in the form, the process or anywhere else in the implementation.
21. At 17:55, the IT service re-started the server. This did not make a difference to the issue, indicating that the server was not the cause of the problem.
22. The Granicus developers continued to look at the background code and the server logs, and at 18.07 they said they had found a problem with "illegal characters" which seemed to be the cause of the issue. They removed these, made some changes to the background code, and the form was tested successfully at 18.36. The form was re-published at 18.45. The CRM Manager continued to monitor the form throughout Friday evening and through the weekend, providing updates to the education team to say how many forms had been successfully submitted.

Incident Response – Communication

23. A series of communication messages were issued as follows:

4.10pm – website banner message alerting parents to technical issues

4.20pm – Admissions Team emailed schools authorising them to release results to parents who approach them

4.35pm – social media post: *“We are aware of the technical issues on the transfer test results page and our digital team are working to resolve this as quickly as possible. Apologies for the inconvenience and thank you for your patience.”*

6:15pm – social media post: *“We are very sorry that parents and young people have had a delay in being able to access their secondary transfer test results. This problem has been caused by an IT system which is outside of the council. We are working with the IT company to get an urgent resolution. We know that this is a really important issue for those people awaiting results and we are working with colleagues across the council to ensure you can access results within the next 24 hours. We will update you by 8pm this evening about how you can get your results.”*

6.20pm – Email sent to all members. Recalled and then a revised email sent at 6.40pm saying: *“Please be advised there is an IT system issue which is currently impacting the availability of secondary transfer test (11+) results for parents and young people. We know that this is a really important issue for those people awaiting results and we are working now with colleagues across the council to ensure that these results can be accessed as soon as possible. We will provide a further update to you by 8pm this evening.”*

6.30pm –statement sent to BFP and Bucks Herald from Cllr Anita Cranmer

7.09pm – social media post: *“The secondary transfer test (11+) results website is now available and young people can access their results at [buckinghamshire.gov.uk/xxx](https://www.buckinghamshire.gov.uk/xxx) We are really grateful to everyone for their patience while we worked with third parties to resolve the issues and we’re sorry that the delay in accessing results caused angst and frustration.*

7.15pm – second statement sent to BFP and Bucks Herald from Cllr Anita Cranmer

7.21pm – Email sent to all members: *“I’m pleased to be able to tell you that the secondary transfer test (11+) results website is now available – young people can now access their results online if they haven’t already received them another way. The web link is: <https://www.buckinghamshire.gov.uk/schools-and-learning/schools-index/school-admissions/transfer-test-results/>”*

Saturday 16 October - Letter to head teachers from Cllr Anita Cranmer

Monday 18 October - Letter for families from Cllr Anita Cranmer and Simon James, with request for schools to share the letter with year 6 pupils.

Reasons for the Technical Failure

24. A post incident technical review has been undertaken by Granicus. This has identified two key reasons for the technical failure:
- a) A previously undiscovered defect in the Granicus source code. This had not been identified by Granicus previously, as the issue in their own testing environment only caused a very slight slowdown under normal load. The defect was caused by some inefficient short name service code which overloaded one of the databases when thousands of users all tried to log into the system at the same time. This caused the Granicus Version 2 Integrations system to fail, which then led to an automatic fallback to the Granicus legacy Version 1 Integrations system.
 - b) The Version 1 Integrations system is not as robust as Version 2, and it failed because there were 'Illegal Characters' (rounded quotation marks) in the V2 form code, which V1 is not able to handle, but is allowed under version2.
25. The fall back to the Version 1 together with the illegal characters then meant that the system moved into a spiral of server requests which quickly overwhelmed the whole Granicus UK platform.
26. Granicus have confirmed that BC built the form correctly and indeed it worked in the test environment. The process and form had also been successfully used in January 2021 when 1000 parents logged on simultaneously without an issue. Having followed all of the build and test protocols. BC could not have known that there was a problem with the Granicus source code.

Lessons Learned

Change Management

27. The Council's governance arrangements provide that key risks, issues and change proposals are escalated where appropriate through a number of routes, including through risk registers and forward plans which operate at service, directorate and corporate levels.
28. In this particular case, the arrangements to release the selection test results were managed as a business as usual process by the Admissions Team who are highly experienced in delivering this complex process. The decision to implement the new form was taken at head of service level, without referral to the Service Director for Education or the Corporate Director for Children's Services. The use of a new form was not an IT change project and so did not go through a corporate change control approval process. There was not strong senior oversight of this high-risk process, including the move to a new technical solution. The 11+ results process had not been entered onto the Pentana system and thus was not on any of the Council's risk registers. There was no project plan setting out the roles and responsibilities of staff across the council, and

no cross-council project group which would have been appropriate to evaluate options, resolve issues, mitigate risks and oversee the plan. A report on the process had not been scheduled onto the forward plan.

29. Had the implementation of the new form been identified as a high risk/high impact change proposal through the Council's control mechanisms, appropriate levels of assurance would have included:
- Exposure and challenge through the corporate risk register.
 - IT and Communications support planned and available before/during/after the change window.
 - SRO at Director level responsible for the change
 - Project plan for delivery
 - Cross council coordination group – including comms and IT
 - A 'release' plan, which would have included the mitigation activity were the system to fail and what proactive comms should follow a failure.
 - Plans for immediate post launch (to include comms etc).
30. The Council has a single project methodology for all IT change projects – these are currently submitted to the IT (Change Approval Board) CAB for change control approval. The IT Change Advisory Board (CAB) reviews all changes to IT systems and reviews the risks associated. It ensures appropriate testing takes place and that all stakeholders are informed of the change. Additionally, it ensures back up plans are ready and tested.
31. The development of the 11+ results process was a standard form release, not an IT change project, and so did not go through the change control approval process. Moving forward, the IT change control process will be extended to include all requests for Forms and incorporate sign off of key services. The release process would include a 'release' plan, including the mitigation activity were the system to fail and what proactive comms should follow a failure. We will need to ensure that the arrangements enable rapid turnaround of new forms where there is an urgent business need.
32. Currently, we have not rolled out a standard project management methodology across the Council. There are a range of approaches inherited from legacy councils which incorporate the key elements of project management, and individual services have developed specific approaches. A corporate project management system is being implemented through Service Now. Whilst there would need to be some flexibility to adapt to the significant diversity of projects across the Council, it would be appropriate to establish a standard project toolkit, linked to the Service Now solution, to ensure consistency in the core principles of good project management across the council and provide a single oversight of change projects.

Contract Management

33. Members asked for assurance that the contractual levers in the contract with the supplier were sufficient in light of this incident, and indeed whether we have recourse. A copy of the contract is available if requested. Granicus responded to the incident in line with the agreed SLA - Level 1 Emergency and worked outside of their published support

hours to resolve the issue within 3 hours. The problem code has since been corrected within the update cycle, as per contract.

System Governance

34. The technical solution was developed within the Admissions Team, with support from the CRM Forms team in Customer Services. IT services were not involved, although were asked to assist on Friday pm when the incident was underway. There was a lack of clarity about who the senior owner of the solution was and who should be the lead liaison point with Granicus.
35. As contract managers, Customer Services should establish clear governance arrangements for the use of the system by front line services which provide clarity on the roles and responsibilities of the CRM Forms Team, IT and the service area.

Design of the Form

36. Technical failure can never be completely ruled out as demonstrated in the Facebook outage in October 2021, the Fastly outage in June 2021 (which brought down Amazon and Gov.uk), and the Government Covid booster booking form process. In terms of the development of the form, there is no way to completely avoid any potential bugs in software / network issues etc. Proper testing is vital, but as in this case, there can be issues in any software platform which are only exposed in real-world use, which the Council as a user will never be aware of.
37. It is important therefore that in designing its processes the Council takes steps which can help to mitigate these issues.
38. For example, it is usually accepted that new processes should not be released on a Friday. However, the date and timing of the release of the results was determined by the Headteacher Admissions Working Group who specified that the results were issued at the end of the school day on a Friday so that pupils were not affected by results being shared in public places such as the playground upon collection. Going forward, these issues should be fully explored and addressed through a release plan.

Data Security

39. The data was held internally on the Council's own SQL16 database and remained there. It has been confirmed by Granicus that there were no data breach or security issues.

Communication

40. The Communications Team had not been informed that it was 11+ results day and as a result there was no communication plan in place, and no contingency communication arrangements prepared for the event of system failure. The Communications Team were managing messages with members and the public during the incident but were not always clear about the messaging. The Communications Team did not have direct access

to communications channels with schools which potentially limited the options available in managing the situation. It is recognised that the team need to develop a much stronger approach to crisis communications.

Business Continuity Arrangements

41. In the event of an incident which might require activation of a business continuity plan, staff are required under the Council's business continuity plan to notify their service director who will then determine the level of response required. In this particular case, those staff who had become aware had focused on trying to resolve the issue, rather than escalating the issue. As a result, the first escalations to the directorate senior management and CMT came through Member and social media alerts, rather than internal escalation. For CMT, there was a lack of clarity about who the senior owner of the solution was, and who was the lead liaison point with Granicus.
42. Once the issue was identified, the Crisis Response Management Team met in accordance with the Council's business continuity arrangements to provide strategic management of the response.
43. During the incident, there were some examples of a lack of communication between the operational response and the strategic response. For example, CMT were not informed that the service sent a message to schools giving them permission to share results at 4.20pm. It is also notable that the chronology of events showed a number of people emailing colleagues for assistance rather than picking up the phone, which resulted in some delays in a time critical situation.
44. Based on this incident, the CCU will provide awareness raising of responsibilities within the BCP across the council, as well as some targeted training for the teams involved. Escalation protocols will be developed with those front-line teams most likely to be the first made aware of issues (e.g. customer services, web team, comms team).

Actions

Based on the lessons learned above, the following actions will be taken to minimise future incidents and their impact.

- a) A calendar of key events which impact on residents (such as Exam Results) established as part of the CMT forward plan so that appropriate assurances can be obtained;
- b) All Corporate Directors to review proposed system and high impact process changes through Directorate Management Teams and ensure these are incorporated onto directorate risk registers;
- c) Establish clear governance arrangements around the development and implementation of Form applications, including a clear process owner at senior levels. Produce a governance protocol setting out clearly defined roles and

responsibilities to be jointly owned by Customer Services, IT and the front-line services using the system;

- d) Review the relationship with Granicus to ensure it meets the needs of the Council;
- e) The Service Director for Education to be the senior process owner and directly lead the development and delivery of the key school admissions processes. There needs to be a robust risk management strategy with mitigations that reflect the significant impact of this process. A clear plan needs to set out roles and responsibilities of teams across the council including Customer Services, Digital, IT, Communications. This should include a requirement that a full technical team from Bucks and the supplier should be on standby throughout the delivery of the results;
- f) Establish a detailed business continuity plan for all key school admissions processes with effective arrangements in place should the technology fail;
- g) Risk Management training to be provided to the Education Service to ensure roles, responsibilities and the risk recording/escalation process is fully understood;
- h) Communications Team to be made aware of all key activities that involve critical engagement with schools and/or parents. Communications Team to be provided with access to communications channels with schools as a back-up;
- i) Communications Team to review crisis communications approach;
- j) Extend the IT 'change and release process' to include all requests for forms, and incorporate sign off of key services; the release process would include a 'release' plan, including the mitigation activity were the system to fail;
- k) Implement single project management toolkit, linked to Service Now project solution, and provide a single oversight of change projects;
- l) CCU to provide awareness raising of responsibilities within the BCP across the council, as well as some targeted training for the teams involved in this incident;
- m) Shared escalation protocols to be developed with those front-line teams most likely to be the first made aware of issues (e.g. customer services, web team, comms team).