Notes from Maxis/New Pencil Postmortem

Conducted at New Pencil, Sausalito, CA, December 13, 1999

Attending:

- Michael Murguia, President, New Pencil
- Adam Murguia, artist, New Pencil
- Scot Tumlin, artist, New Pencil
- Scott MacIntyre, artist, New Pencil
- John Beebe, artist, New Pencil
- Chris Baena, Associate Producer, Maxis
- Charles London, Art Director, Maxis

Overall message:

Maxis had a fundamentally positive experience with New Pencil. NP produced a large number of assets for Maxis at high quality and with great success regarding stylistic integration with Maxis-generated assets. The understanding is that this postmortem's purpose is to support and improve the resulting good relationship between NP and Maxis so as to facilitate a repeat performance for future business.

These notes combine both my initial report of the meeting and New Pencil's responses and additions.

Successes: New Pencil

- NP delivered all assets contracted for at the quality and price expected.
- NP worked assiduously to iterate all content until approved.
- NP worked to maintain an open process for art critique and to assure Maxis that ongoing production concerns were met.
- NP successfully integrated the Maxis Sprite Exporter and SprMaker5.exe into their workflow so as to reduce risk and iteration time in the development of content and assure compatibility of reviewed work with the game environment.
- A very high number of final assets were properly archived and supported.

Successes: Maxis

- Maxis successfully provided NP with tools and software support to allow NP to best control their costs regarding iteration and compatibility.
- Maxis provided a very thorough spec set that allowed NP to hit the mark on their deliverables.
- Maxis provided on-site art critique and direction in order to minimize iteration time. It is agreed that this system should be continued, regardless of other workflow changes.
- Maxis provided clear expectations as to deadlines and workflow.

Shortcomings: New Pencil

Problem1: Art direction from Maxis was not fully utilized in the iteration process.

Often, New Pencil failed to effectively propagate art direction commentary from Maxis throughout the NP art team. An estimated 30-40 percent of iterations on some objects were repeats of similar challenges overcome on like objects done by different NP resources. Although this situation

improved dramatically by introducing weekly on-site review by London and a revamped group-review process internal to NP, this problem was not completely resolved by the end of the project.

Strategy for resolution: Replace object-per-resource assignment with process-per-specialist/team assignment.

Rather than assigning entire objects to single resources at New Pencil, the different processes necessary to producing objects will be assigned to those resources whose strengths maximize their efficiencies in that area. Specifically, lighting work will be assigned to the strongest lighters, modeling to the strongest modelers, etc. This will allow art direction that pertains to a technique to be integrated properly the first time and then reapplied as a matter of course to subsequent objects whose needs demand it. It will also provide NP with a more efficient way of bringing its resources along in skill and consolidating stylistic work throughout the studio.

Risk: Interleaved pipelines change the way labor and time is calculated.

NP has preferred to calculate their costs and labor assignments on an artist-per-object-per day basis. Interleaving the pipeline so that several artists will touch several objects over the object's workflow will represent a more complex calculation of costs and time estimation. Maxis asserts that there will be a time saving and thus a cost savings to NP resulting from the reduction of iteration, but latencies in the pipeline where resources wait for an object to move from one stage to another may introduce unforeseen delays. New Pencil can reduce those possible delays by maintaining a lead lighter or modeler on the lighting or modeling teams to assure stylistic consistency, but having a fluid team assignment of line resources so as to upstaff or downstaff those segments of the pipeline to maintain consistent object production levels. Maxis can reduce those delays by working ahead of time with New Pencil to delineate a clear order of priority for the delivery of objects or groups of objects, so that New Pencil can properly adjust resources.

Problem2: Failure to assign the planned amount of resources to the project resulted in progressive delays throughout the schedule.

While NP had made estimation of how many resources would be working on the project over specific periods, in many instances those labor levels were not met. Various causes were identified, most obviously the inability of NP to obtain a large enough pool of high-quality labor to meet the planned labor level. As well, misestimations of the amount of time each object would require for completion eroded the effective labor assignments. Even after an initial re-evaluation of deadlines and labor levels were made, this problem persisted throughout the product, eventually adding some 8 weeks or more to the final delivery schedules.

Strategy for resolution: Reliance on existing staff levels rather than planned larger staff levels should be the basis of any future labor assignment plan.

NP, largely as a result of working through the last project with Maxis, has settled on a core crew of resources whose abilities now cover the range of skills needed to predict labor assignment more accurately. Furthermore, NP has implemented a better assignment and progress tracking system that will yield quantitative data on object progress and reduce error. Again, attention needs to be paid to both the advantages of the interleaved pipeline system with regard to labor efficiency here, and the hidden latencies that erode real labor assignments. New Pencil has maintained that their estimations of time per object were too low; Maxis asserts that proper implementation of the new interleaved pipelines will recapture much of the expected increases, keeping the time estimations per object essentially static at current levels.

Problem3: General communication failures resulted in difficult delivery obstacles near the tail end of the project.

A combination of email disruption, physical plant problems and inaccessibility of the team leads produced an unacceptable break in delivery and communication at the critical final phase of the

last round of the project. While this was resolved in about a week, it added more time to the schedule and also resulted in a flurry of confusing loose ends and obstacles to final integration.

Strategy for resolution: General detail orientation must be maintained especially at the close of the project.

Most, if not all, of the things that should be done here are being done. The primary cause of this situation was the ongoing labor shortage at NP combined with some unavoidable technical breakdowns. It is not foreseen that this problem will repeat itself. NP understands the need to keep communication open and to make sure Maxis is not subjected to “surprises”.

Problem 4: Failure to track changes made by NP to texture maps provided by Maxis resulted in differing files with the same filenames.

A large number of texturemaps were provided to NP so that stylistic look would remain consistent across both Maxis and NP-authored models. Iteration of the NP items often required changes to be made to certain maps, but very often no name change was associated with the new file, causing conflicts when the delivery of model, texturemaps and renders were made to MAXIS

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Strategy for resolution: All changes to texturemaps must be noted by some filename change.

In addition, NP will return only those texturemaps which have been changed and renamed, or which have been authored new for the item, so that the Maxis texture archive and the NP texture archive remain properly mirrored. Some strategy for comparing the final archives at the end of the project would be useful as well, to check for creeping errors.

Problem 5: Unresolved conflicts between plugins used by NP and the homegrown Maxis Sprite Exporter resulted in several final .max files being unopenable once delivered to Maxis.

Investigation revealed that while geometry could be successfully merged into a new, clean .max file, lights and lighting sets could not, thus destroying a large part of the labor invested in the final file.

Strategy for resolution: To minimize incompatibility with Maxis software, 3DSMax plug-in directory will be cleaned except for essential plug-ins necessary for final rendering.

Establishment of a separate final render station that mirrors the typical MAXIS workstation in setup should accomplish this without serious interruption of NP workflow.

Problem 6: Final models were often far heavier in polygon count than necessary.

Due to the fact that NP relies strongly on the NURBs modeling tools of Maya and Rhino, the final .max files were often plagued by polygon counts powers of ten above what was necessary to render at the proper resolutions. (The most extreme and humorous item of this type has been referred to, repeatedly, as the 26,000 polygon cube.) This caused various problems such as very long render times, unexplained crashes, extreme difficulty in subsequent model editing, and general sluggishness in all aspects of file manipulation.

Strategy for resolution: Better focus on polygon control will be exercised by NP.

Shortcomings: MAXIS

Problem1: In some instances, specifications were too general in the area of aesthetic variation.

In several cases, most notably the Expensive Modern Green Sofa, NP was not given enough direction regarding the tack to take in order to have the final object vary enough from reference material in order to protect Maxis from liability while still fulfilling its function in the game. This resulted in numerous iterations of the object without clear progress.

Strategy for Resolution: Maxis needs to provide more clear cut recommendations at to the removal or addition of detail and elements.

This may be provided through additional reference material, sketch material, or written direction.

Problem2: .omk files often did not function properly or as expected, and replacements were often delayed.

Problems included naming inconsistencies, symmetry problems, palette problems, and frame animation problems.

Strategy for resolution: Better testing of .omks and reuse of working .omks.

The template files provided to NP for reconciliation of animation to sprites art can also be run through the exporter to provide stub sprites that demonstrate the workability of .omk files. As well, existing .omk files that already function in the game should be relied upon to provide better support for NP in this area.

Risk: Less programmer support will be available in this next round of work due to the fact that programmers will still be working on the launch of the Sims.

During the time NP is expected to begin work, .omk production will be more of a re-use issue rather than a creation issue. Strategies for reuse and for self-editing of .omks will need to be developed in order for these problems to be controlled.

I want to thank New Pencil for being so open and engaging in this postmortem process. I think we all agree that the next round will be more efficient and productive for us all knowing what we know now about these processes.

Charles