Unit 1: PIPELINE

The pipeline is a term used to describe a system, made up of many different steps, for producing VFX. They have to be able to be non-linear & versatile and may differ a lot between VFX houses, depending on many different factors, not limited to:

- The size of the company.
- The talent in the company.
- The type of work expected. (e.g. Feature films, TV, Adverts..)
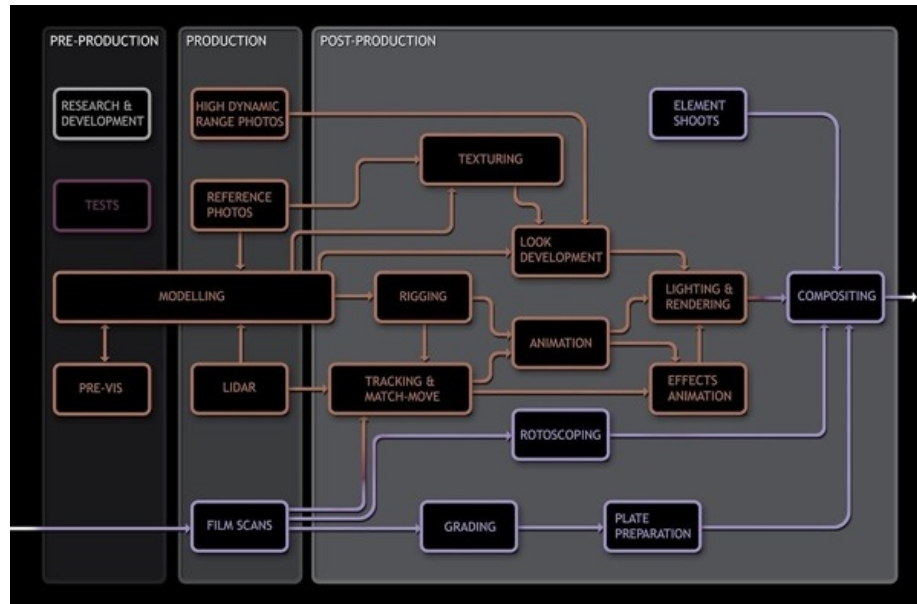
A typical VFX pipeline:

Figure 1: A Pipeline (Representation by Andrew Whitehurst)

image: Andrew Whitehurst

Collaboration between artists all working with different software packages and file formats introduces the need for a new area, in companies large enough to afford them: the pipeline department. They are responsible for creating and managing custom infrastructure that aims to make interactions between different departments more efficient. With companies such as Double Negative and Cinesite branching into to world of feature animation, new and adventurous routes are being explored, with the ultimate goal of having the most cost-effective (efficient) and functional pipeline.

I explore the functions of all of the major creative departments you might find

in a VFX house in Unit 10 (VFX Craft). So instead, here is a brief summary of what they each might output.

Discipline	Output
Onset	Reference photos, HDRIs, LIDAR/3D scans
Concept	2D & 3D art
Modelling	3D models
Rigging	Deformable character rigs
Texture & Shader Design	Texture maps, Shader scripts
Environments/DMP	3D geometry, Matte paintings
Matchmove	3D Cameras, Animation curves
Animation	Animation curves, Geometry caches
Creature	Geometry caches
FX	Geometry caches
Lighting	Light rigs, 2D passes
Roto / Prep	2D elements
Comp	2D sequences

The Pipeline TD's Role

Aside from the example above, a pipeline td also has many other responsibilities. I will explain a few below.

Note: By "Pipeline TD", I am making a generalisation and referring to a members of the pipeline department, whose titles probably differ.

Artist Workflow Tools

There may be some very specific tools that a show requires, or some general workflow tools that an application of choice doesn't do so well, that pipeline may be asked to develop.

Production Workflow Tools

In some cases, production may ask pipeline for specific tools to more easily meet their demands.

Meeting Production Demands

As in any business role, when faced with an issue, Pipeline TDs have to find a balance between the practical solution and the idyllic one. There can pressure to complete a script, or push some renders through as soon as possible. The

TD needs to have a good enough understanding of the production, creative & technical processes at the company to realise the consequences of his actions, which he would use to inform his decisions.